



*Special Issue on*  
Health Care and  
Hospital Management



# Journal of Management

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# Journal of Management

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# Journal of Management

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## Foreword

The Sustainable Development Goals (SDGs) do aim at achieving the social sector development especially in the developing countries. Health is an essential input for development of human resources as well as quality of life to ensure social and economic development of nation. India has now gone with Ayushman Bharat which caters to improvement of all the three sectors-primary, secondary and tertiary. Almost all States and Union Territories have adopted Ayushman Bharat which includes the setting up of Health and Wellness Centres and PM-JAY (Prime Minister Jan Arogya Yojana). The States and UTs are also encouraged to undertake innovative practices in health. There is also emphasis on Public Private Partnerships and Incentives to retain health staff in rural areas.

The Hospital Sector in India is also undergoing changes over the years. Most of the State health insurance schemes, the public, private, trust, railway and other public sector hospitals have tied up with PM-JAY. There is an emphasis on effective administration viz; quality and accreditation, patient effective care, patient safety, leadership, team building and effective communication between hospitals and patients etc. In this context, Management of Health Care in public health as well as in hospitals have become a key to success in this sector. This special issue by ASCI Journal of Management touches upon key issues in the Health care and Hospital Sector.

In her paper, Ms Ratna Anjan Jena reviews the health policies and health expenditure in India. She highlighted the importance of favourable policy environment by States to ensure better health. The inappropriate underspending on Health is a concern and better health expenditure can improve outcomes in Health. Dr Bhaswathy Adhikari highlights the fact that the healthcare system of a country is primarily responsible for delivering essential health services to its population. It attempts to review the adequacy of the current Indian healthcare system in light of secondary data. It talks about the lack of infrastructure, manpower and utilisation of available services, which result in poor health outcomes, while suggesting improvement. It emphasizes that the only key for accomplishing the Universal Health Coverage goals is an efficient management of resources. The role of government as facilitator, along with a strong collaboration between public and private sector for effective resource management is suggested for addressing the existing gaps and proper balance in the system. Dr BNV Parthsarathi in his article attempts to highlight the current issues and challenges in the Indian healthcare system. The paper looks at this with respect to affordability of healthcare, manpower shortage, inadequacy of health infrastructure and weak penetration of health insurance. The author suggests various solutions like increasing health infrastructure, more efficient PPP

models etc. to improve the health care situation in the country. Ms Sunetra Ghatak in her paper emphasises the impact of rapid population growth and lack of available resources on the provision of adequate and equitable basic health services. The paper talks of the Public Private Partnership (PPP) model, and its impact on the healthcare of the Indian population. It analyses the availability of healthcare establishments, and the role of financial mechanism in minimising out of pocket expenditure of the people. The finding suggests that current numbers of establishments are not enough and are unevenly distributed across states and sector. It concludes that we need more health establishments and disperse of facilities across states as well as sector to make the PPP model an ingenious one.

The paper by Dr Uma Aysola et al talks about the massive financial opportunity with the political focus poses the health system with need to strengthen its administration and management systems. It refers to skills related to community medicine, public health, and hospital administration can alter several aspects like planning, organizing, decision making, need assessment, resource allocation, disease and disaster management, evaluation and sustainability for the future. Dr Subodh in his article on Equity in Health Care: Analysis of the Tribal Health Initiatives run as Public Private Partnerships in the State of Odisha evaluated the effectiveness of various PPPs in tribal health and the lessons learnt. The paper indicates that the PPP models ( MaaGruha Scheme and the PHC run by NGOs) in Tribal health in Odisha have shown considerable and significant improvements in the health status of the tribal populations but there is still a lot to be achieved. There has to be better performance indicators and monitoring and evaluation has to be strictly undertaken by the Government.

Dr Kabra, in his paper, addresses the important issue of Medical Practice and Law and how inability to create and understand the real time case details leads to miscarriage of justice. Dr Roopashree in her paper highlights the fact that importance of providing care and comfort during the intrapartum phase for painless delivery is a strategy for better adaptability to new mothers. The authors suggested that incorporating yoga and multidimensional approaches have been an impacting factor for women during the reproductive phase.

Dr Sivapriya in her study reviews the major activities of different schemes under NHM and assesses the progress and also responses from key stakeholders in NHM Odisha to understand the innovations and challenges under NHM. It raises concern about the geographical coverage in Odisha due to regional disparities. The paper concludes that Healthcare in Odisha is in transition, and the state is investing in health technology to promote scientific evidence based scientific decision making and promotes efficiency, enforcement of standard treatment guidelines and referral protocols to ensure quality of healthcare. The paper by Mr Ashish Amarao et al looked at the factors behind the Shortage of Doctors in Indian Villages. They

identified the key reasons of shortage and the reluctance of the doctors to work in villages. They suggested methods like providing better infrastructure and better pay scale to encourage doctors to work in rural areas.

Hope this special issue would help readers broaden their understanding of the sector. Please note that the Editor had to accommodate a paper on knowledge management, away from the theme, at the end due to prior commitment given to the author.

**Dr Subodh Kandanathan**

Professor and Director

Centre for Health Care Management, ASCI and

Technical Editor of the issue on Health Care and Hospital Management



# A Brief of Health Policies and Health Expenditure in India

Ratna Anjan Jena\*

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## Abstract

*Health is a State subject and it is the primary duty of the State to make improvements of public health. Therefore, States need to have a favourable policy environment to accelerate the impact of economic growth on general wellbeing of the population, that directly depends upon quality health condition of human resource. The inappropriate public spending on health has been one of the unfortunate features of Indian development. Public expenditure on health in India as per cent of GDP, remained around 1.2 to 1.4 per cent over years. According to NHA, 70.3 Per cent of the health budget was contributed by private sector, of which households alone spent 67 per cent, during 2014-15. Improving health expenditure of a population can be beneficial for economic outcomes at the individual and the national level.*

---

## I. Introduction

1.1 Health is a condition of wellbeing and is the most crucial aspect of Human Capital, a multidimensional entity. It has been defined by the World Health Organization (WHO), as a state of complete physical, mental and social well-being and not merely an absence of infirmity and disease. It is one of the several key determinants of economic development and empowerment. The role of healthcare in improving a nation's wealth and spurring economic growth is well established. A healthy life and longevity is an important indicator of human development. Poor health can have a direct negative effect on the opportunities of an individual, such as his/her earning capacity, performance in school, cognitive abilities etc. Also, lack of good health may make an individual slip into entitlement failure which again may translate into inequalities in other dimension of welfare (WDR 2006)<sup>1</sup>. Sustainance of good health in an individual, at every point of time, is thus crucial.

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<sup>1</sup> World Development Report 2006, The World Bank <http://documents.worldbank.org/curated/en/435331468127174418/pdf/322040World0Development0Report02006.pdf>

1.2 In the initial years of independence the focus of the State policies was to achieve the accelerated economic growth as an immediate necessity to provide basic necessities to the people. However, a favourable policy environment is required to accelerate the impact of economic growth on general wellbeing of the population, as human capital is a multidimensional entity and directly depends upon quality health condition of human resource.

1.3 The Indian Constitution emphatically states that, it is the liability of the State to secure a social order for the promotion of welfare of the people, and it is the primary duty of State to make improvements of public health. Therefore States have a definite role to provide quality and accessible health care services to the people through public health care expenditure and to make provisions for the same, through revising policies from time to time.

1.4 In India, the health expenditure is dominated by private spending which not only results in out-of-pocket (OOP) spending but also adversely affects the current social welfare and labour productivity. Report of the National Commission on Macroeconomics and Health<sup>2</sup> and the background papers have revealed that in the year 2004-05, 71% of the health budget was contributed by private sector, of which households alone spent 69%. Improving health expenditure of a population can be beneficial for economic outcomes at the individual and the national level.

## **II. A brief on the evolution of Health Policies in India:**

2.1 The Health Care system is a State subject and the Government of India partners with the state governments to meet people's need. Health care policies were based on the recommendations of the Bhole Commission Report (1946) in the initial phase after Independence, that envisaged that state would take care of the welfare needs of the people and provide health services, helping the poorest and deprived, emphasizing that none should be denied care for want of ability to pay, The investment in public health care to be 5% of GDP, which was still lower compared to other countries. In 1978, India was a signatory to Primary Health Care Declaration at Alma Ata, adopting "Health for all by 2000". The first National Health Policy of 1983 encouraged private initiative in health care service delivery, while at the same time expanding access to publicly funded comprehensive primary health care.

2.2 The post-2000 period witnessed a further shift in utilizing private sector resources for addressing public health goals, liberalizing the insurance sector with a view to provide new avenues for health financing and redefining the role of the state from being only a provider to a financier, thus affecting the health sector.

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<sup>2</sup> Reports of National Commission on Macroeconomics and Health, Ministry Of Health And Family Welfare Government Of India, 2005. <http://www.who.int/macrohealth/action/Report%20of%20the%20National%20Commission.pdf>

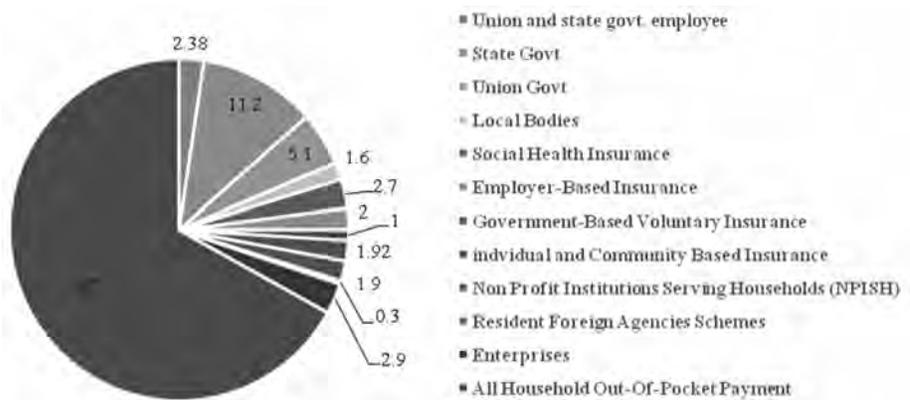
National Rural Health Mission (NRHM), launched in 2005, aimed at meeting people's health needs in partnership with states. Similar to NRHM, Nation Urban Health Mission (NUHM) (2013) was launched, and both NRHM and NUHM have been integrated under one umbrella of National Health Mission in 2013. NHM includes schemes like Janani SurakshaYojana (providing cash to pregnant women), provision of ASHAs (Accredited Social Health Activists), who are community health volunteers supporting extension of health services. The NRHM made priorities to the low performing states.

2.3 The recent introduction of New Health Policy (NHP) 2017 can be termed as “a new level progression” in Indian public health system. It responds to the changed scenarios of the country envisages the health to be as the fundamental right, and, sets the target for public expenditure on health to be 2.5 per cent of GDP, of which 40 percent (1 per cent of GDP) would come from Centre. The states' health expenditure should be increased up to 8 % of their annual budget, to increase health infrastructure, ensuring availability of paramedics and doctors as per Indian Public Health Standard (IPHS) norm in high priority districts by 2020. It also advocates focussing on emerging diseases, investment in promotive and preventive health-care.

### **III. Health Expenditure:**

3.1 The World Health Organization (WHO) defines the total health expenditure as all that expenditure whose primary purpose is to restore, improve and maintain health for nation and individuals. The health expenditure includes spending on all the health care services including preventive and curative, disease control and implementation of various health programmes, administration of health services, medical education, training and research etc. and capital investment for health purposes. The Health care financing in our country has the following sources: i) the public sector comprising of Central, State and Local Governments, in addition to several public sector units, ii) the private sector encompassing mainly households, non-profit sector, insurances etc. and iii) external financing through grants and loans.

**Figure 1**  
**Source of Fund Flow for Total Health Expenditure (THE) in India during 2014-15 (in per cent)**



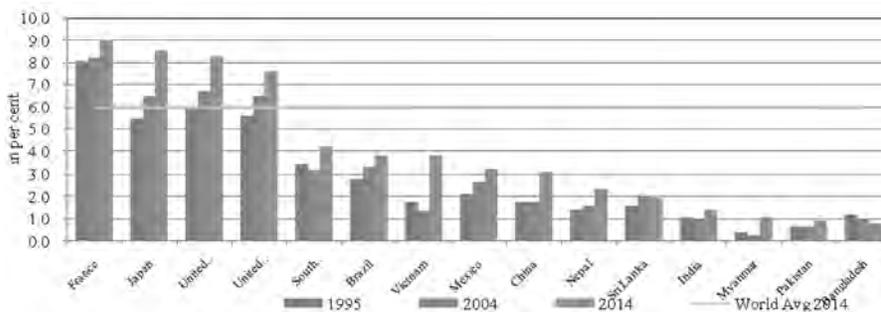
Source: National Health Accounts: 2014-2015

3.2 The NHA estimated THE at Rs.4,83,259 crores for the year 2014-15, and at Rs.133,776 crores for 2004-05, in current prices. The THE measured in absolute terms has increased, but stagnated as a share to GDP, only 3.90% (Public: 1.10%, Private: 2.61%, ext.source: 0/19%).

**A. International Scenario:**

3.3 According to the WHO, the public health expenditure of India has been, around 1 per cent of its GDP for few last decades (Figure 2), very low in comparison to the developed and many developing countries. During 2014, WHO’s estimate of India’s public health expenditure at 1.4 per cent out of GDP is much lower than the world average of 5.98 per cent.

**Figure 2**  
**Public Health expenditure, as per cent of GDP across Countries**



Source: World bank, World Health Organization, Global Health Expenditure database

## B. India's Public (Centre and States) Expenditure on Health :

### a. Total Health Expenditure

3.4 The Public or Government expenditure in the health sector consists of all the government expenditure on health and family welfare, at the Central and State level as both the

**Table 1**  
**Public Health Expenditure at current and constant prices over the years.**

Year	Health exp. at current price	Health exp at constant price	Average growth rate of exp (in absolute terms)	Average growth rate of exp (in real terms)	Year	Health exp. at current price	Health exp at constant price	Average growth rate of exp (in absolute terms)	Average growth rate of exp (in real terms)
1990-91	7496	19000			2009-10	89039	65823	23.40	16.34
1995-96	14280	22184	13.76	3.15	2010-11	102038	69235	14.60	5.18
2000-01	27187	31912	7.18	3.67	2011-12	112519	70361	10.27	1.63
2004-05	37702	37702	14.53	8.34	2011-12*	112519	112519	10.27	
2005-06	45486	43642	20.65	15.76	2012-13*	127885	118484	13.66	5.30
2006-07	53058	47838	16.65	9.62	2013-14*	142290	124150	11.26	4.78
2007-08	60755	51666	14.51	8.00	2014-15 (R.E.)*	176712	149212	24.19	20.19
2008-09	72153	56577	18.76	9.50	2015-16 (B.E.)*	193643	160189	9.58	7.36
					CAGR		13.89#		

Source: Indian Public Finance Statistics 2015-16. Note: \* from 1990-91 to 2011-12 in 2004-05 prices and from 2011-12 to 2015-16 in 2011-12 prices. At 2004-05 prices; \* At 2011-12 prices ; # CAGR over 1990-91 up to 2015-16

Governments spend in the form of capital resource allocation and revenue expenditure. Total public health expenditure (at Current Price), Central and State taken together stood at Rs. 1,93,643 Crore in 2015-16 which was 9.58 per cent higher than the previous year. The public health expenditure at constant (2011-12) prices was at Rs. 1,60,189 Crore. Between 1990-91 and 2015-16 the total public health expenditure grew by 13.89 per cent compounded annually at current prices.

3.5 The Centre's share on Health Expenditure had increased continuously from 18.23 per cent to 32.49 % from 1990-91 to 2010-11 and the state's share continuously decreased from 81.77% to 67.51% during the same period. The share of Centre steeply decreased from 31.15% in 2011-12 to 14.54 % during 2015-16, and accordingly, the state's share has shown a steep increase up to 85.46 % during the same period. Total public health expenditure, as a percentage of total public expenditure has

also stagnated at around 4-5% from last two decades. The Centre's share was only 1.7% , states' share was around 7.6 % during 2014-16. From the pattern of Health Expenditure it can be concluded that health has not been treated as a priority sector for both the Centre and the State Governments.

**Table 2**  
**Health Expenditure out of Total Public Expenditure**

Year	% Share in total Health Exp		%Growth				Total Health Exp as % of Total Expenditure		
	% Center	% State	Center		State		Total %	Center %	State %
			Constant Prices	Current Prices	Constant Prices	Current Prices			
1990-91	18.23	81.77		4.83	1.51	8.39			
1995-96	18.95	81.05	4.07	14.77	3.08	13.68	4.87	1.74	7.91
2000-01	20.86	79.14	3.02	6.5	2.53	5.99	4.92	2	7.73
2004-05	24.3	75.7	9.75	16.02	7.09	13.21	4.57	2.5	6.75
2005-06	24.83	75.17	14.54	19.38	11.33	16.03	4.87	2.42	6.97
2006-07	24.17	75.83	5.12	11.87	8.91	15.89	4.88	2.38	6.82
2007-08	27.76	72.24	25.33	32.88	3.96	10.22	4.89	2.55	7
2008-09	28.31	71.69	10.84	20.21	7.9	17.02	4.75	2.46	6.99
2009-10	30.47	69.53	25.04	32.63	12.64	19.47	4.91	2.81	6.8
2010-11	32.49	67.51	12	22.03	1.99	11.11	4.85	2.93	6.63
2011-12*	31.15	68.85	-2.18	6.14	4.08	12.93	4.72	2.87	6.48
2012-13*	30.2	69.8	1.89	9.97	6.54	14.99	4.83	2.91	6.5
2013-14*	28.13	71.87	-3.31	2.67	6.86	13.47	4.82	2.7	6.59
2014-15(R.E)*	15.08	84.92	-31.98	-29.72	49.93	54.92	5.04	1.75	7.61
2015-16(B.E)*	14.54	85.46	2.36	4.48	6.89	9.1	5.1	1.74	7.67
CAGR				12.76		13.99			

*Source : Various IPFS of MoF; Note: from 1990-91 to 2011-12 in 2004-05 prices & from 2011-12 to 2015-16 in 2011-12 prices(\*)*.

#### **b. Health Expenditure in terms of Capital and Revenue Expenditure:**

3.6 Government's total expenditure on health, water supply and sanitation and family welfare if analyzed in terms Capital expenditure gives an idea about how much productive assets have been created, and, the Revenue Expenditure gives an idea about the routine spending for giving salaries to doctors, staff, other paramedical employees etc. required for operations and functioning for the public health care system.

**Table 3**  
**Capital & Revenue expenditure on health**

Year	Pub. Health Exp. (Capital+Revenue) In Rs.Crore		% Share in Health Exp.		Annual growth in %				Share of center in total		Share of state in total	
	Const prices	Curr prices	Rev	Capl	Revenue		Capital		Rev	Capl	Rev	Capl
					Const price	Curr price	Const price	Curr price				
1990-91	19000	7496	91.56	8.44		19.37	4.28	80.63	95.72			
1995-96	22184	14280	90.61	9.39	2.93	13.52	5.37	16.21	20.32	3.98	79.68	96.02
2000-01	31912	27187	86.17	13.83	0.03	3.42	34.06	38.59	23.65	1.41	76.35	98.59
2004-05	37702	37702	83.48	16.52	4.69	10.67	31.51	39.02	28.36	1.34	71.64	98.66
2005-06	43642	45486	84.28	15.72	16.86	21.8	10.17	14.83	28.81	1.84	71.19	98.16
2006-07	47838	53058	80.77	19.23	5.05	11.79	34.06	42.66	29.18	1.84	70.82	98.16
2007-08	51666	60755	80.78	19.22	8.02	14.53	7.92	14.42	33.87	0.18	66.13	99.82
2008-09	56577	72153	79.84	20.16	8.22	17.37	14.88	24.59	33.84	4.94	66.16	95.06
2009-10	65823	89039	83.35	16.65	21.45	28.82	-3.9	1.94	35.34	4.61	64.66	95.39
2010-11	69235	102038	86.11	13.89	8.68	18.4	-12.29	-4.44	36.36	7.12	63.64	92.88
2011-12	70361	112519	86.21	13.79	1.75	10.4	0.89	9.47	34.63	8.01	65.37	91.99
2011-12	112519	112519	86.21	13.79		10.4		9.47	34.63	8.01	65.37	91.99
2012-13	118484	127885	84.88	15.12	3.68	11.9	15.46	24.62	34.02	7.45	65.98	92.55
2013-14	124150	142290	83.7	16.3	3.32	9.71	13.01	20.01	32.25	5.94	67.75	94.06
2014-15 (R.E.)	149212	176712	77.31	22.69	11.02	14.72	67.26	72.83	18.23	3	81.77	97
2015-16 (B.E.)	160189	193643	80.64	19.36	11.97	14.29	-8.38	-6.48	17.04	2.98	82.96	97.02
<b>CAGR</b>						13.37		17.74				

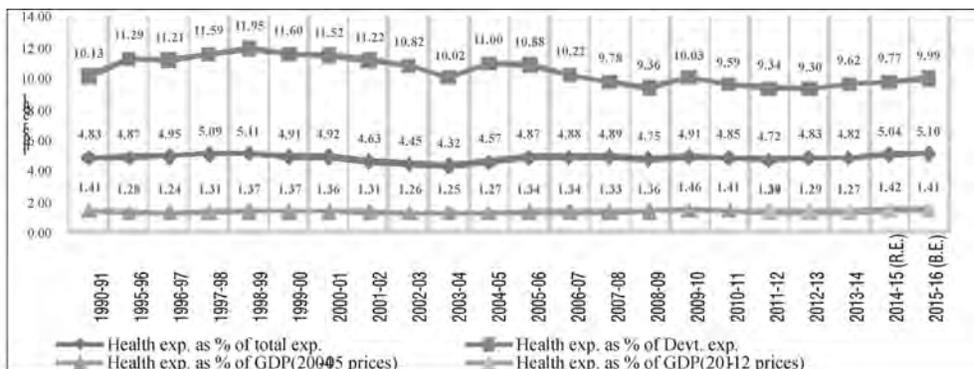
3.7 The huge public health care system takes more than 75% of government's total health expenditure for its maintenance, as revenue expenditure, as high as 91.56 % during the year 1990-91; much consideration was not given for creating assets and infrastructure as capital expenditure was as low as 8.44%. During 2014-15 the share of Capital expenditure out of Total Expenditure of the Centre rose to 22.69%. The states' share in the total revenue was around 82.9% and that for capital was 97.02 % during 2015-16. States contribute the larger amount on public health expenditure, and it has been steadily increasing. States' capital expenditure stood at Rs. 36 thousand Crores, whereas the revenue expenditure was at 1.24 lakh crores in 2015-16.

### C. Contribution of Total Health Expenditure

3.8 This share of Development expenditure dropped in 1995-96 from 13.9 percent point to 11.3 per cent out of Total expenditure impacting health expenditure too

dropping as a percent of GDP from 1.41 in 1990-91 to 1.28 in 1995-96. The highest increase in health expenditure was in the year 2014-15. The ratio has stagnated right from 1990-91 at around 1 to 1.4 per cent of the GDP for two decades till 2015-16. The Figure 3 below gives a vivid picture of these aspects.

**Figure 3**  
**Health Expenditure as % of Total Exp., Dev. Exp. and GDP : A Comparison**



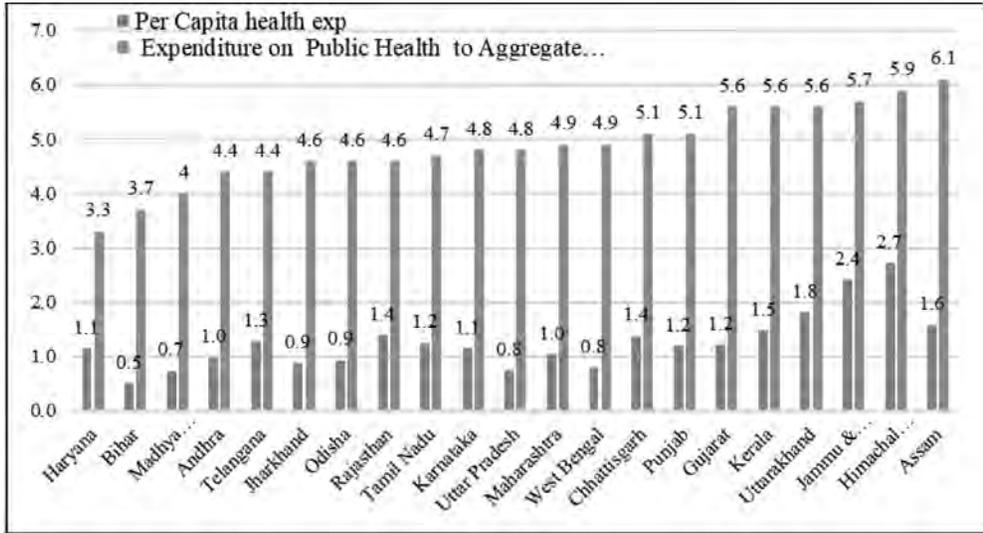
Source: Indian Public Finance Statistics 2015-16.

**D. Per capita Public expenditure on Health:**

3.9 The annual per capita annual public expenditure on health was around Rs 1498 at current price and around Rs.1240 at constant prices in the year 2015-16. This expenditure has grown at 5.33 % (CAGR) from 1990-91 to 2015-16 (constant prices). In absolute term the public expenditure on health per capita has been increasing; the largest annual increase was in the year 2014-15, around 18.63 %, whereas the lowest growth was in the year 2011-12.

3.10 The Per capita annual expenditure on health by the state, Jammu and Kashmir is the highest, about Rs 2.4 thousand per capita. Assam has the highest spending, about 6.1 percent of state’s aggregate expenditure on public health, but per capita PHE is quite low. Haryana and Bihar spend less than 4 per cent of their aggregate expenditure, UP spends the least, about Rs. 190 per capita.

**Figure 4**  
**State wise per capita expenditure on health and public health expenditure to aggregate expenditure**

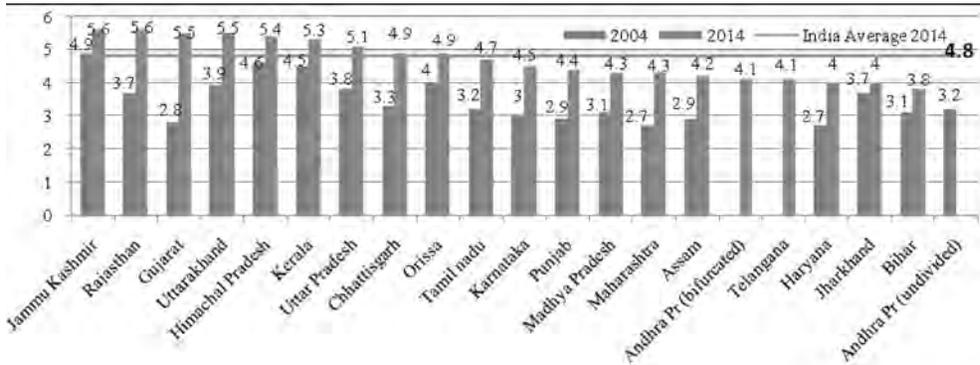


Source: State Finances A Study Of Budgets of 2016-17, RBI

**E. State Scenario of Health Expenditure :**

3.11 A state is considered to be a better performing state if its expenditure on Health facilities is comparatively greater than that of other states, as it will raise the standard of living by reducing the burden of health expenditure on the people. The Figure 5 gives state wise Health expenditure out of Total State Government Expenditure. The average expenditure on health as a share of total government expenditure for the nation as a whole was approximately 5 per cent in the year 2013-14. Among the major Indian states, Jammu and Kashmir and Rajasthan had the highest (5.6%) while Bihar had the lowest expenditure share (3.8%) during 2014. Over the decade from 2004 to 2014, the expenditure share on health in states' total expenditure has increased substantially; Gujarat and Rajasthan spending more.

**Figure 5**  
**State-wise Share of Public Expenditure on Health out of Total Government Expenditure**



Source: Reserve Bank of India

**F. Panel Data Analysis of factors influencing States’ Health Expenditure:**

3.12 A panel data regression analysis of the factors influencing changes in the percent of State Governments’ Health Expenditure out of Total Expenditure, for 18 major states has been done taking the parameters as i) State’s Income, ii) Receipt, iii) Proportion of Urban population and iv) Expenditure to Receipt Ratio, for the year 2004 and 2014, using andom effect model. Income level of State may positively influence expenditure on health; similar association is assumed with government receipts. Higher level of urbanization may also force government for allocating and spending funds for the health sector.

**Table 4**  
**Result of Panel Data Analysis of factors influencing States’ Health Expenditure**

Public Exp on Health out of Total Govt. Exp	Coef.	P>z
NSDP Per cap (Rs. thousand) ***	0.0131	0
Receipts (Rs. Thousand Cr.) **	0.0065	0.01
Proportion of Urban Population	-0.0139	0.132
Expenditure to receipts Ratio	-0.0008	0.932
_cons	3.559129	0.001
<b>R Sq:</b>		
within 0.8953		
between 0.0232		
overall 0.4096		

Source: Author’s Calculation

3.13 The panel data analysis shows states' per capita GSDP and receipts are significantly associated with higher percent of health expenditure, implying that states that have higher level of revenue and higher per capita income tend to spend larger proportion of total expenditure on health. Urbanisation and expenditure to receipt ratio were insignificant in determining governments' share on health out of total expenditure.

#### **G. Ranking of States through the approach of Principal Component Analysis:**

3.14 The Principal component analysis has been applied to rank 20 major states according to their Health Expenditure, at two time points, the year 2004-05 and 2014-15 in order to understand the differences among the pattern of Health Expenditure. Three state level indicators namely, i) Government Health Expenditure as a percentage of Gross State Domestic Product (GSDP)<sup>3</sup>; ii) Government Health Expenditure per capita<sup>4</sup>, iii) Ratio of expenditure on medical and family welfare over total expenditure of the state<sup>5</sup>, were brought together to rank the major Indian states using principal component analysis. The rank of the major states with their scores and contribution of each parameter for the year 2004-05 and 2014-15 is presented in the Table 5. Telangana is included in the analysis of 2014-15.

3.15 The top five rank holder states are Himachal Pradesh, Jammu & Kashmir, Uttarakhand, Rajasthan and Kerala. Health expenditure in these states is higher relative to other states in India. The lowest five rank holder states are Haryana, Bihar, Jharkhand, Telangana and Andhra Pradesh where health expenditure of government is lower than that of other states.

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<sup>3</sup> GSDP from NITI AAYOG and Govt. Health expenditure from National Health Accounts.

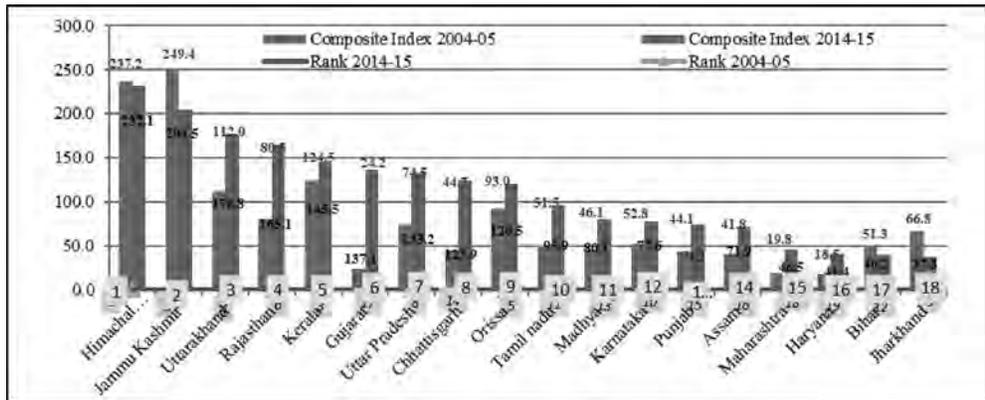
<sup>4</sup> Per capita Health expenditure is Author's estimated calculation from Census data of 2001 and 2011 and using health expenditure estimates from National Health Account

<sup>5</sup> State Finances – A Study Of Budgets Of 2015-16, Reserve Bank Of India

**Table 5**  
**Rank of the major states with their scores and contribution of each parameter for 2004-05 and 2014-15**

State	2004-05				2014-15				Rank	
	Contribution of			Composite Score	Contribution of			Composite Composite	2004-05	2014-15
	Share of Exp on M&FW out of Total Exp	Govt health exp as percent of GSDP	Govt. health exp per capita		Share of Exp on M&FW out of total Exp	Govt. health exp as percent of GSDP	Govt health exp per capita			
Himachal Pradesh	77.4	71.1	88.7	237.2	80.9	70.6	80.6	232.1	2	1
Jammu Kashmir	89.6	92	67.8	249.4	91	76.5	37.1	204.5	1	2
Uttarakhand	48.9	32.2	30.9	112	85.9	36.9	54	176.8	4	3
Rajasthan	40.7	24.2	15.6	80.5	91	46.6	27.5	165.1	6	4
Kerala	73.3	18.6	32.5	124.5	75.8	24.9	44.7	145.5	3	5
Gujarat	4.1	2.6	17.5	24.2	85.9	18	33.2	137.1	17	6
Uttar Pradesh	44.8	23.7	6	74.5	65.7	55.5	12	133.2	8	7
Chhattisgarh	24.4	11.7	8.6	44.7	55.6	41.8	26.5	123.9	14	8
Orissa	52.9	25.3	14.7	93	55.6	45	19.9	120.5	5	9
Tamil Nadu	20.4	10.4	20.7	51.5	45.5	16.8	33.6	95.9	11	10
Madhya Pradesh	16.3	21	8.8	46.1	25.3	40.5	14.3	80.1	13	11
Karnataka	12.2	17.6	23	52.8	35.4	12.5	29.7	77.6	10	12
Punjab	8.1	10.3	25.6	44.1	30.3	16.4	27.5	74.2	15	13
Assam	8.1	22.3	11.4	41.8	20.2	39.1	12.6	71.9	16	14
Maharashtra	0	1.3	18.5	19.8	25.3	0	21.2	46.5	18	15
Haryana	0	0	18.5	18.5	10.1	3.6	27.7	41.4	19	16
Bihar	16.3	35	0	51.3	0	40.2	0	40.2	12	17
Jharkhand	40.7	15.9	10.2	66.8	10.1	20.7	6.5	37.3	9	18
Telangana					15.2	0.4	19.4	35		19
Andhra Pradesh (Bifurcated)					15.2	13.6	3.6	32.4		20
Andhra Pradesh	20.4	38.8	16.3	75.4					7	

**Figure 6**  
**Rank of the major states of India**



Source: Author's Calculation

#### IV. Private Expenditure On Health:

4.1 Diseases not only creates out-of-pocket expenditures for patients and their families (Uplekar et al. 2001<sup>6</sup>), but also undermines income generation and; as a consequence, future economic welfare (Gertler & Gruber 2002<sup>7</sup>) is jeopardized. Households accept to trade future welfare of all its members against access to health care for one of them, perceived as essential for survival (Russell 1996<sup>8</sup>). Also they do not have other option but to incur debts, sell off productive assets, or sacrifice investment in future productivity (Whitehead et al. 2001)<sup>9</sup>. And this kind of emergent private payments on health care can easily become catastrophic health expenditure especially when the public health care system is unreachable and of not any quality and poor people feel it necessary to make use of private services (Uplekar 2000<sup>10</sup>; Meessen et al. 2003)<sup>11</sup>. It has been made evident by many researchers that financial burden of households in meeting their health is substantial

<sup>6</sup> Uplekar, M., Pathania, V., & Raviglione, M. (2001). Private practitioners and public health: weak links in tuberculosis control. *The Lancet*, 358(9285), 912-916.

<sup>7</sup> Gertler, P., & Gruber, J. (2002). Insuring consumption against illness. *American economic review*, 92(1), 51-70.

<sup>8</sup> Russell S (1996) Ability to pay for health care: concepts and evidence. *Health Policy and Planning* 11, 219-237.

<sup>9</sup> Whitehead M, Dahlgren G & Evans T (2001) Equity and health sector reforms: can low-income countries escape the medical poverty trap? *Lancet* 358, 833-836.

<sup>10</sup> Uplekar MW (2000) Private health care. *Social Science and Medicine* 51, 897-904.

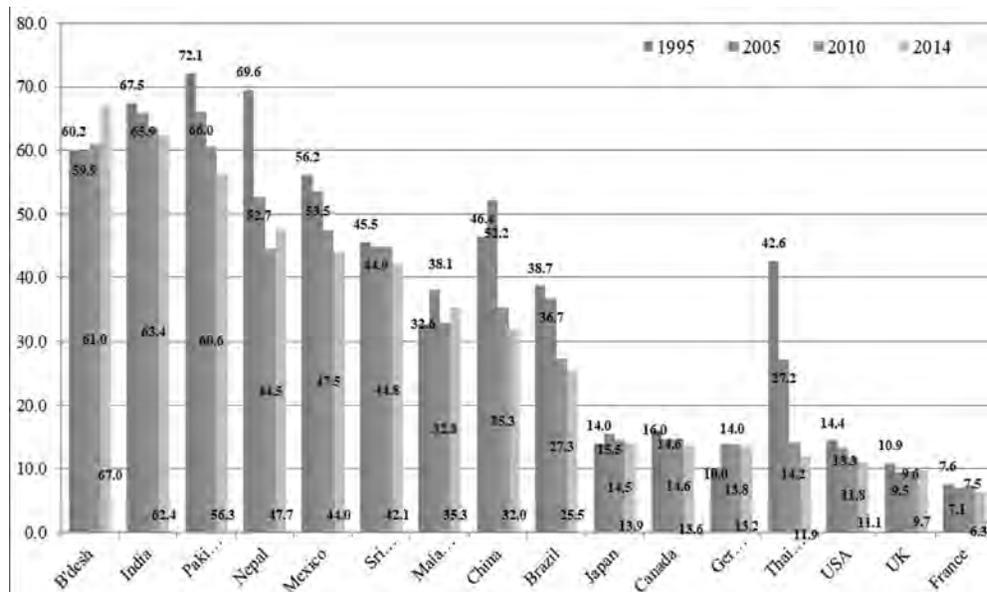
<sup>11</sup> Meessen B, Zhenzhong Z, Van Damme W et al. (2003) Iatrogenic poverty. *Tropical Medicine and International Health* 8,581-584.

and the consequences is very adverse to the people at large, especially the poor; at the time of illness they spend more on health, reducing food and non-food consumption and the situation becomes much worse, if the patient is the breadwinner.

**A. International scenario:**

4.2 The comparison of share of out of pocket expenditure(OOP) on health in the total health expenditure with respect to that of the neighbouring countries during 2014 show that India is the 2nd highest at 62.4%, more than the share of Pakistan (56.3%), Nepal (47.7%), and Sri Lanka (42.1%). Other developing countries like China, Brazil and Mexico have performed better than India. Thailand has been an out-performer with comparatively low out of pocket expenditure and shown a sharp reduction in the share over two decades. For USA the out-of pocket expenditure is only 11 percent in the year 2014. It can be emphasized that the large volume of private health expenditure out of total health expenditure in India is probably one of the largest in the world.

**Figure 7**  
**Out-of-pocket expenditure as a percentage of total expenditure on health**



Source: *Global Health Observatory indicator, WHO<sup>12</sup>; World Health*

**B. Private Final Consumption Expenditure On Medical Care And Health Services:**

4.3 The Private Final Consumption Expenditure in the domestic market on medical care and health services (PFCEH) as estimate by National Accounts Statistics (NAS), show that household expenditure on health in India is sizeable, Rs.342.9 thousand

crore in 2015-16 at current prices increasing from Rs. 299.8 thousand crores in 2014-15. At constant price it was Rs. 269.2 thousand crores. There has been a steady rise of share of pfceh in the total private final consumption expenditure; raising it from 3.69 per cent in 2011-12 to 4.32 per cent in 2015-16 in constant price. This shows the increasing burden of health expenditure on the citizen of India.

**Table 6**  
**Private Final Consumption Expenditure and Per Capita Health Expenditure**

Year	Pvt. Final Cons Exp on medical care and health services						Per capita Private Health Expenditure			
	pfceh in crores		%share pfceh in pfce		%share pfceh in GDP		in Rs.		Growth	
	const. price (2004-05)	cur. price	const. price	cur. price	const. price	cur. price	Const Price	cur. price	Const Price	cur. price
<b>1990-91</b>	30508	9206	2.98	2.25	2.26	1.73	363.63	109.74	-0.01	6.19
<b>1995-96</b>	40022	20624	3.23	2.57	2.3	1.84	431.28	222.24	9.15	15.88
<b>2000-01</b>	68366	62436	4.23	4.42	2.92	3.13	670.91	612.72	9.65	16.07
<b>2004-05</b>	95560	95560	4.96	4.96	3.22	3.22	877.5	877.5	10.77	13.49
<b>2005-06</b>	103925	105244	4.97	4.87	3.19	3.1	939.65	951.57	7.08	8.44
<b>2006-07</b>	113008	115900	4.98	4.66	3.17	2.93	1007.2	1032.98	7.19	8.56
<b>2007-08</b>	118077	127648	4.76	4.48	3.03	2.79	1037.58	1121.69	3.02	8.59
<b>2008-09</b>	126204	140595	4.75	4.32	3.03	2.65	1093.62	1218.33	5.4	8.62
<b>2009-10</b>	137407	154872	4.82	4.16	3.04	2.54	1174.42	1323.69	7.39	8.65
<b>2010-11</b>	147851	170599	4.79	3.91	2.99	2.35	1246.64	1438.44	6.15	8.67
<b>2011-12</b>	157102	187922	4.69	3.7	3	2.25	1307.01	1563.41	4.84	8.69
<b>2011-12#</b>	181334	181334	3.69	3.69	2.08	2.08	1508.6	1508.6	-	-
<b>2012-13#</b>	198663	214348	3.84	3.82	2.16	2.16	1608.61	1735.61	6.63	15.05
<b>2013-14#</b>	216675	248829	3.9	3.84	2.21	2.22	1732.01	1989.04	7.67	14.6
<b>2014-15#</b>	248094	299838	4.2	4.15	2.35	2.41	1958.12	2366.52	13.06	18.98
<b>2015-16#</b>	269277	342945	4.3	4.32	2.37	2.51	2098.81	2672.99	7.19	12.95

Source: National Accounts Statistics, MoSPI; # base year 2011-12. others : base year 2004=05

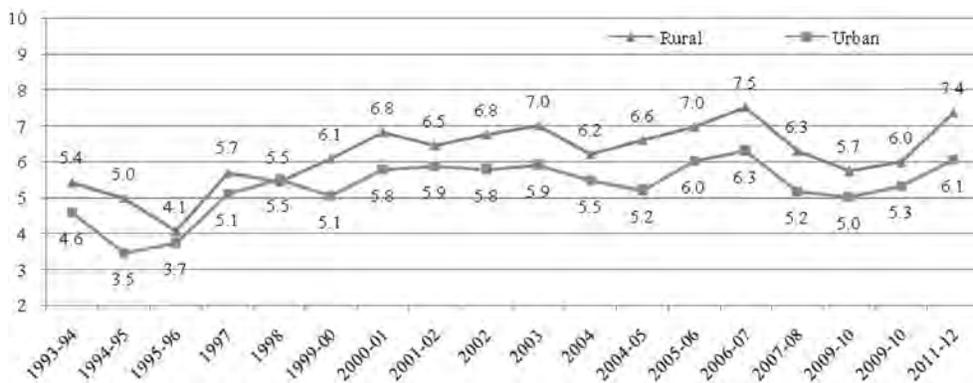
4.4 The trend in the per capita private health expenditure shows growth over years at constant prices. The expenditure rose from 363.6 3 in the year 1990-91 to 431.28 in 1995-96 growing by 9.2 per cent over the last year. In the beginning of this decade India saw a major change in its economic policy— the economy progressed towards liberalization, privatization and globalization. After the year 1995-96 the growth rate of per capita private health expenditure kept on

fluctuating. There are two estimates for the year 2011-12 as there is a change in National Accounting System. The per capita health expenditure stood at Rs 2098.8 at constant price (base 2011-12) and at 2672.9 at current price in the year 2015-16.

**C. Out of pocket health expenditure of Households from NSS surveys:**

4.5 The share of medical expenditure out of the total monthly consumption expenditure of households in urban and rural India over various rounds of NSS depict the increasing trend, and this share is more in rural areas Figure 8, showing the burden of health care on households. In the year 2011-12) this share stood at 7.4 per cent for rural and 6.1 per cent for urban India. It is assumed that with increase in diagnostic technology and rising level of income, the expenditure on medical care would increase. However, the household health expenditure is sizeable, reflecting the ‘compulsion’ of the households to spend on health, as the government health care service is inadequate. The increasing trend of this ratio is consistently higher for rural areas than that for urban areas. This shows the gaps that rural India faces in delivery of health services as household have to spend a larger proportion of their total expenditure on health care.

**Figure 8**  
**Share of Out of Pocket Medical Expenditure in Total Consumption Expenditure**



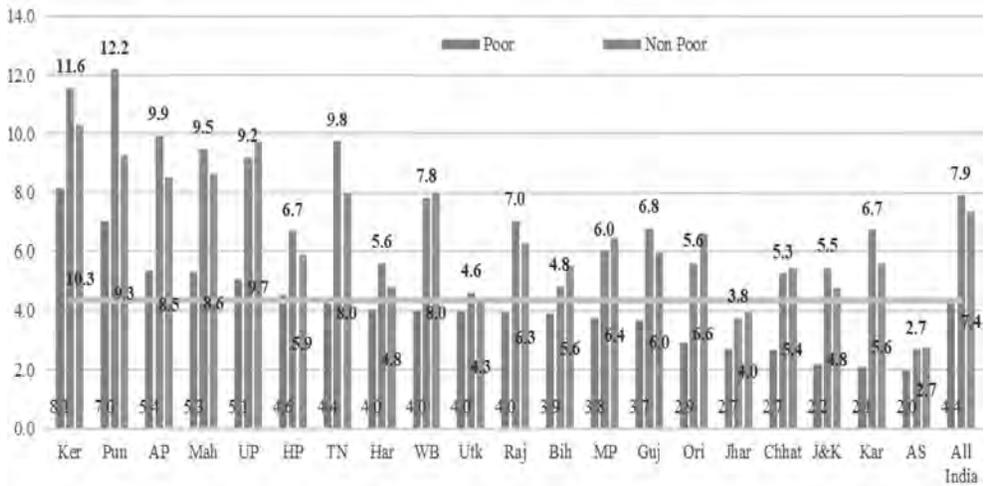
Source: Various rounds of National Sample Survey

4.6 In addition to this, rural India is also characterized by larger proportion of spending on non-institutional sources as has been revealed by NSS 61<sup>st</sup> (2004-05) and 68<sup>th</sup> (2011-12) round of consumer survey. Therefore, it is very imperative that the policy focus should be made in such a manner that the institutional health care services will be in the reach of the rural population thereby reducing the burden of health care services.

**D. Burden of Health care expenditure revealed by 68<sup>th</sup> round of NSS (2011-12):**

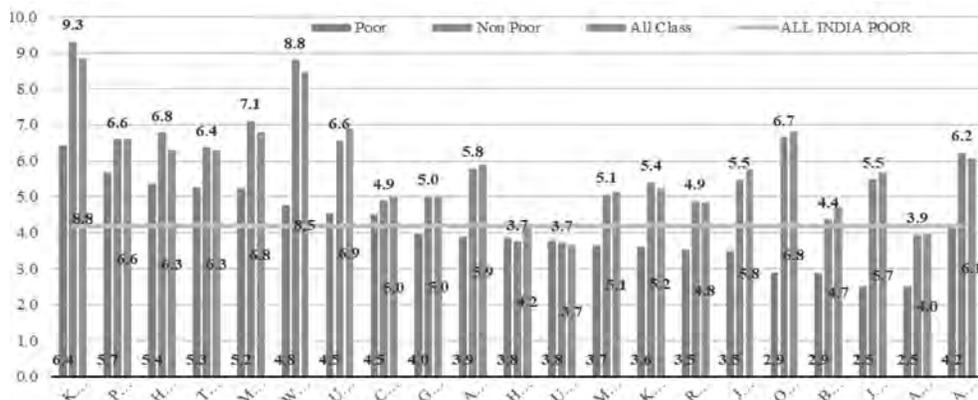
4.7 The state-wise share of medical expenditure out of total consumption expenditure during the year 2011-12 (68<sup>th</sup> round) shows that this ratio was the highest in Kerala for rural poor, and in Punjab for rural non-poor. Assam still accounts for the lowest level of expenditure in medical care out of total expenditure for all class, poor as well as non-poor. An average Indian rural poor would spend 4.4 percent of total consumption expenditure on medical care. The Government’s effort should be to formulate more effective policies to outreach population of rural regions of India.

**Figure 9**  
**Percentage of medical expenditure out of total consumption expenditure in rural areas, 2011-12**



4.8 The urban poor and non-poor both spend a high percentage of total consumption on medical care in Kerala in 2011-12. An average Indian urban poor spends 4.2 percent of total consumption expenditure on medical care. The Figure 10 shows that medical expenditure in many states fall below the national average.

**Figure 10**  
**Percentage of medical expenditure out of total consumption expenditure in urban areas, 2011-12**



Source: National Sample Survey 68<sup>TH</sup> round

**E. Per capita monthly medical expenditure; NSS Rounds of 2004-05 and 2011-12**

4.9 The analyses so far reveals that urban households spend less percentage of non-food expenditure on medical care as compared to rural households in both rounds of NSS survey, showing that there is inadequate public expenditure in rural areas in medical care facilities. The following Tables 3.11 and 3'12 give the analyses of category-wise Per Capita Medical Expenditure.

**Table 7**  
**Category-wise Medical Expenditure - Rural**

Rural Category	Average Expenditure		% Medical Exp. out of Tot. Consumption Exp.		% Medical Exp. out of Tot. Non-food Exp.	
	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12
V. Poor (< 3/4 of PL)	10.3	20.5	3.4	3.7	8.4	8.6
Mod Poor (3/4 PL to PL)	18.5	35.1	4.4	4.6	10.4	10.5
Poor (<PL)	14.5	30.2	4.0	4.4	9.6	10.0
Non Poor (>PL)	56.7	122.3	7.3	7.9	14.7	14.9
Lower Non-Poor (PL-1.5*PL)	33.4	55.6	5.7	5.3	13.0	11.5
Upper Non-poor (1.5*PL -2*PL)	57.4	95.2	7.2	6.6	15.0	13.2
Higher Non-poor (>2*PL)	126.9	261.6	9.4	10.5	16.4	17.6
All Class	36.4	94.8	6.3	7.4	13.4	14.3

Source: Various rounds of National Sample Survey

4.10 Average expenditure per head per month on medical in 2011-12 was Rs. 94.8 and Rs. 150.5 in rural and urban areas respectively. The proportion of expenditure on medical out of total consumption and non-food expenditure has increased over years.

**Table 8**  
**Category-wise Medical Expenditure - Urban**

Urban Category	Average Expenditure		% Medical Exp. out of Tot. Consumption Exp.		% Medical Exp. out of Tot. Non-food Exp.	
	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12
V. Poor (< 3/4 of PL)	15.0	26.4	3.8	3.9	8.7	8.5
Mod Poor (3/4 PL to PL)	25.4	41.1	4.6	4.3	9.9	9.1
Poor (<PL)	20.5	36.2	4.3	4.2	9.4	9.0
Non Poor (>PL)	73.3	179.3	5.3	6.2	8.7	9.7
Lower Non-Poor (PL - 1.5*PL)	38.5	64.1	4.9	4.9	9.5	9.6
Upper Non-poor (1.5*PL - 2*PL)	56.1	101.9	5.2	5.5	9.1	10.0
Higher Non-poor (>2*PL)	115.1	266.3	5.5	6.6	8.3	9.7
All Class	57.4	150.5	5.2	6.1	8.7	9.7

Source: Various rounds of National Sample Survey

4.11 The 'very poor' class spends about 3.7 per cent in rural areas and 3.9 per cent in urban areas capita per month. Expenditure made on medical constitutes a substantial share out of total expenditure and total non-food expenditure. Average expenditure on medical in rural area constitute larger percent of total expenditure and non-food expenditure; 7.4% and 14.3% respectively, than in urban area; 6.1% and 9.7 percent respectively in 2011-12. There is not much of a difference between proportions of expenditure on medical among rural and urban poor; however the difference is high between the non-poor. The very poor class spend about 8.6% in rural areas and 8.5% in urban areas of their non-food expenditure which is quite substantial, if compared with that of an average Indian either in rural or urban areas.

## V. Conclusion:

5.1 The framers of constitution felt that it was the duty of the State to work towards raising the level of nutrition, standards of living and improve public health of the people, as Nation's development can only be ensured through human resource investment and the importance of a healthy population in the country cannot be denied. However, the Government till today can not even think of materializing the suggestion of Bhore Committee during 1946 to invest 5% of GDP for public health. There has not been significant increase in Public expenditure on health in

India as per cent of GDP, which remained around 1.2 to 1.4 per cent over years, though the public expenditure to GDP has somewhat increased in last two years.

5.2 The inappropriate public spending on health has been one of the unfortunate features of Indian development. There has been a fall in share of capital expenditure on public health in last two years; that is important to cater to the needs of infrastructure, machineries and other physical asset for increasing accessibility to public health services. Furthermore, with its endorsement of the SDGs, India will have to constantly raise its expenditure during the coming years to meet the deadline by raising not just core budgetary spending every year, but also spending toward social determinants of health namely, affordable housing, planned urban development, pollution control, road safety etc. The public health should be treated as a fundamental right of the citizens and considering the challenges on the health front, the Indian government needs to commit itself for achieving the public health goals by allocating enough budget in the future years which will also help to achieve the SDGs within the timeframe.

5.3. The private players in this important sector tend to focus on profit maximization and are hardly concerned with public health goals. This adversely affects social welfare and labour productivity, and deters future growth and development prospects. The Government intervention is therefore essential to boost or restore balance in the consumption of healthcare services.

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## Review of Health Care System of India

Bhaswati Adhikary\* and Dr. Debabrata Das\*\*

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### Abstract

*The healthcare system of a country is primarily responsible for delivering essential health services to its population. This commentary attempts to review the adequacy of the current Indian healthcare system in light of secondary data. It seemed that the existing system is still lacking behind in terms of infrastructure, manpower as well as utilisation of available services, the result of which is clearly visible through the poor health outcomes. With several new initiatives at present times, there is still hope for improvements. Considering the fiscal constraints and the trend of the epidemiological transition witnessed in India, it seems the only key for accomplishing the Universal Health Coverage goals is efficient management of resources. A strong collaboration between public and private sector for effective resource management will address the existing gaps in the system in a more efficient manner. In addition to that the government will have to play the role of facilitator as well as strict regulator in order to maintain proper balance in the health care system and trim out the conflicts.*

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### The Context:

“The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, and political belief, economic or social conditions” (WHO, 1946). Considering its importance at current times, health has been included under the 2030 Agenda for Sustainable Development, emphasizing on Universal Health Coverage (UHC) and right to health is adopted in several domestic or constitutional laws as well. Accepting health as a human right creates a legal commitment on States to ensure access to timely, acceptable, and affordable health care of appropriate quality as well as to provide for the underlying determinants of health like safe and drinkable

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water, sanitation, food, housing, health-related information and education, and gender equality (WHO, 2017). In order to ensure good health in a country, a robust health-care system is mandated. But while delivering so, a country faces a range of challenges starting from constantly rising patient number for various ailments to developing new cost-effective treatments. The challenges are more complex for developing countries as they have to balance the health requirements within various constraints. As the relationship between poverty and healthcare access is found to be cyclical, with poverty leading to ill health and ill health further sustaining the poverty level (Wagstaff, 2002), for a country like India concern regarding healthcare is high because of the large underprivileged segment of the population. The aim of this commentary is to review the existing health care system of India in light of UHC.

### **Public Healthcare Policies and Initiatives**

In India health has been prioritized at the constitutional level through Article 47 of Part IV of its Constitution, marking improvement of public health as a duty of the state and simultaneously "Equal Health for all" is attracting global attention. In the midst of all that the major concern for India is the dismal position in terms of health care access. India has got a miserable rank 154th among 195 countries on the healthcare access and quality (HAQ) index in 2016 (GBD 2015 Healthcare Access and Quality Collaborators, 2017). Such a low HAQ index is a clear indication that India has failed to meet up with the primary and basic healthcare service requirement in terms of access as well as quality through proper utilisation of resources.

The significance of human capital quality for growth and development is significantly high for emerging countries like India. Hence maintaining a good health status of its prime workforce in parallel with growth and development initiatives should be the primary concern for Indian government. However the Indian health sector has always received low priority in central as well as state budgets. Public health expenditure being approximately around 1.05 per cent to 1.5 per cent of GDP for a decade clearly substantiates it. The federal structure of Indian health sector with the federal-state divisions of responsibilities and financing held states responsible for organizing, delivering health services to their civilians and center deals with international health treaties, medical education, and prevention of food adulteration, quality control in drug manufacturing, national disease control, and family planning programs. It also sets national health policy including the regulatory framework and supports the states (Gupta & Bhatia, 2014). In 2005, government first recognized public health as a critical component for progress and took various initiatives under the National Health Mission (NHM) "to provide accessible, affordable and quality universal health care, both preventive and curative, which would be accountable and at the same time responding to the needs of the people", primarily focusing on rural population accounting for around 75 per cent of the total population

with the program called National Rural Health Mission (NRHM). Later on in 2013 National Urban Health Mission was launched as a sub-mission of NHM, alongside NRHM. Over the years under NHM program various strategies have been implemented to carry out the necessary architectural corrections in the system. But considering the 1.324 billion population of India, the healthcare infrastructure of India has been often being questioned regarding delivering reasonable services in a convenient manner as aimed. Available data shows not only that the infrastructure is insufficient as per the target consumer but there is shortage as well. Even the NFHS-4 reveals more than half of households in India don't prefer health care from the public sector for reasons like poor quality of care, unavailability of a government facility in close proximity and long waiting time at government facilities wherever available. On the other hand, Rural Health Statistics (Government of India, 2017; Central Bureau of Health Intelligence, 2018) discloses a substantial shortage of trained manpower in the health sector to deliver the various services with efficient manner, especially in the rural regions. Though post NHM implementation outcome indicators have improved compared to earlier status, on gauging the existing infrastructure and planned manpower against the huge population and its requirement one can conclude that the current setup is not optimal enough to achieve the goals of UHC and further modifications are very much needed.

Considering the gaps in health system, Ministry of Health and Family Welfare has been steering other area-specific programs as well alongside with NHM such as *Rashtriya Swasthya Bima Yojana*, a health insurance Scheme for the BPL families to reduce out-of-pocket expenditure on health and increase access to healthcare, *Pradhan Mantri Swasthya Suraksha Yojana* for correcting regional imbalances in the availability of affordable/ reliable tertiary healthcare services and to augment facilities for quality medical education in the country, Programmes for Non-Communicable Diseases, Injury & Trauma etc.<sup>1</sup> Even with such focused interventions the National Family Health Survey 2015-2016 (NFHS-4) reveals that across the country the percentage of households in which at least one usual member is covered by health insurance or a health scheme is 29 per cent only (International Institute for Population Sciences and ICF, 2017). The IRDA reports also show that only 33.04 per cent of the population is enrolled in any kind of health insurance schemes, depicting low financial security against health risk. Ensuring maternal and infant/child health also has been constantly emphasized in the country over the decade with a number of schemes in action like *Janani Suraksha Yojana* (JSY) scheme, the large scale maternal protection scheme to improve maternal and neonatal mortality rate with conditional cash transfer facility, under the NHM programme. Although in the post NRHM period, JSY played a big role in the high uptake of maternal healthcare and decline in socio-economic inequity observed across the country, specifically in the high focus state (Gopalan & Varatharajan, 2012; Powell-Jackson, Mazumdar, & Mills, 2015; Vellakkal, et al., 2017) the outcome of those interventions hasn't been very

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<sup>1</sup> <https://mohfw.gov.in>

effective. As according to the Rural Health Statistics (Government of India, 2017; Central Bureau of Health Intelligence, 2018) only 52 per cent of the total estimated deliveries are reported into the system and thus only half the pregnant women are getting the advantages of the services essential for them. More importantly, even the enrollees are not fully utilizing the provided facilities, indicating a huge utilisation gap. The same is witnessed in case of child immunisation/care as against the registered live-births; consumption of the specific essential immunisation services is hardly one-third of the total. But compared to the previous decade a noticeable shift in the usage pattern of certain healthcare facilities is still keeping the hope alive for further improvement with a little nudge. Over the last decade, the health indicators for India have started to show a positive trend, but when compared with the other major emerging economies and the developed nations India is lagging far behind. The poor positioning of India in terms of health indicators is quite alarming. Further, the non-communicable disease (NCD) burden is also growing with time accounting for 60 per cent of annual deaths. Studies even suggest that the Indian economy is set to lose USD 4.58 trillion by 2030 due to NCD only (Bloom, et al., 2014).

Presently the National Health Policy 2017 is drawing all the attention with its objectives to support UHC by aiming to provide healthcare in an “assured manner” to all, to address current and emerging challenges arising from the ever-changing socio-economic, technological and epidemiological scenarios. The latest initiative **Pradhan Mantri Jan Arogya Yojana (PMJAY)** under the domain of *Ayushman Bharat*, aims to reduce the financial burden on poor and vulnerable groups arising out of catastrophic hospital episodes and ensure their access to quality health services with a benefit cover of Rs. 500,000 per family per year on a family floater basis. PMJAY intends to accelerate India’s progress towards achievement of UHC and Sustainable Development Goals.

### **Role of the Private Sector:**

Since the public healthcare system of India is far from what is desired, with weak infrastructure as well as limited coverage in terms of service delivery, the private sector has a big role to play in the sector to balance out the gap. The private sector in the Indian healthcare domain is in existence since the time of independence and has been evolving since then. But the growth of the private sector started to pick up since the 1980s and seemed to have risen sharply from 1990-91 alongside the liberalisation of Indian Economy. According to study, the presence of private health care provider is vast in number, with a wide range of services, compared to the existing public infrastructure, but this growth is mostly urban-centric focusing on developed regions with a strong public system in co-existence (Hooda, 2015). The private sector has adopted the pro-market approach since its inception and the state has been found to be playing the role of a facilitator, instead of being a strong regulator. Over time private providers have been continuously dominating

the health sector, however, the services are not that cost-effective. As it has been already mentioned that the people are more inclined towards the private health care providers, the absence of strong regulatory authority of the government has resulted in high healthcare cost burden and high out-of-pocket expenses as well. According to National Health Accounts report (2017) for the year 2014-15, only 29 per cent of the total health expenditure is government health expenditure and out-of-pocket expenditure on health by households is 62.6 per cent of the total.

Amidst the different emerging economies, India is the most uninsured country. According to the National Health Profile (Central Bureau of Health Intelligence, 2017), health insurance coverage is only 27 per cent of the total population, of which 80 per cent of which fall under government-sponsored health insurance schemes and 77 per cent of the total coverage is solely covered by public insurance companies. But even with such a large pool of opportunities for the private sector to expand the health insurance coverage, the private providers have repeatedly failed to seize the chance so far.

Attempts have been made by the government to utilize the resources from the private sector for the mass by means of public-private partnership (PPP) under schemes like RSBY, *Rajiv Aarogyasri Health Insurance Scheme*, *Rajiv Gandhi Jeevodayee Arogya Yojana*, Chief Minister's Comprehensive Health Insurance scheme, etc. The literature review done by Prinja, et. al (2017), suggests that the history of PPP in India has witnessed mixed outcomes. Across the country adopted PPP models were found successful in delivering the targeted goals, while at certain states it failed to do so. A number of reasons have been listed by (Chakraborty, undated) regarding the failure of PPP models in India which includes restricted autonomy to the private partner, rushed planning; ill-timed budgetary transfer from the government; disparity between grassroots needs and government agenda; government inefficiency and bureaucracy; higher emphasis on quantitative targets than quality of the service; political interference; and failure to devise sufficient in-built incentives etc.

### **Concluding Remarks:**

Due to the inconsistency in the existing public healthcare system, India is struggling to ensure access to primary healthcare services. In addition, low financial security and the epidemiological transition with disease burden shifting from communicable diseases to non-communicable diseases have made the entire scenario more complicated. Now with the increasing emphasis on UHC, the Indian healthcare system is entangled amidst several issues which must be addressed in parallel to achieve the goals within the targeted time-frame. Several different attempts have already been made at different levels to address these specific issues. Considering the evidence from the past although the new initiatives like *Ayushman Bharat*

sound promising at the time speculations regarding the probable outcome of these attempts are around and validation of such suppositions will emerge over time

As a developing country, India is bound to operate and achieve its goals within its fiscal capacity, which further intensifies the challenges for India. Public investment in the health sector is stagnant for a very time. As a result, public health sector bounded to deliver the limited services with limited workforce targeting only the vulnerable segment of the population. But there is still a large proportion the population is still struggling with the healthcare access and its associated costs. The private sector maintains the capacity to address the gap left by the public system, but the profit-oriented functioning of private sector adds fuel to issues of affordability as well as accessibility. In light of these circumstances, a strong collaboration between public and private sector has the potential to overcome the various constraints. Such collaboration can help in efficient management of available resources and deliver the required boost to the system to effectively shorten the route to achieving UHC. Proper planning and effective administrative autonomy distributed between the two parties can help in effective implementation of the various interventions at a large scale and will also guide the timely incremental reforms in the sector to address the dynamism in the surrounding. In addition to operating as a facilitator, the government has to step up as a strict regulator to fine tune the costing in the sector derived out of the pro-market approach.

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## Need for a Paradigm Shift in India's Health Care

B.N.V. Parthasarathi\*

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### Abstract

*This article attempts to highlight the current issues and challenges in the Indian healthcare system with regard to affordability of healthcare, manpower shortage, inadequacy of health infrastructure, weak penetration of health insurance and suggest an integrated approach to find solutions for the same.*

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### Introduction

India has a long way to go with regard to affordability of healthcare since an estimated 649 million people in India do not have regular access to essential medicines as per WHO estimates. Indians are the sixth biggest out-of-pocket (OOP) health spenders in the low-middle income group of 50 nations, as per a May 2017 IndiaSpend report. For the 300 million Indian citizens who live below the poverty line, ordinary healthcare costs are prohibitively expensive. Close to 40% of Indians live on less than US \$1 per day and most of them pay out of pocket for their healthcare. Out-of-pocket spending in India is over four times higher than public spending on healthcare. According to Centre for Disease Dynamics, Economics & Policy (CDDEP) in the US in India, out of pocket expenditure constitutes 65 percent of the health expenditure, pushing around 57 million people into poverty every year.

### Pricing regulations

The National List of Essential Medicines (NLEM) 2011 contains the list of the essential medicines, which constitutes the list of scheduled medicines for the purpose of price control. National Pharmaceutical Pricing Authority (NPPA), was established on 29th August 1997 as an independent body takes care of enforcement of provisions of the Drugs (Prices Control) Order and monitoring of the prices of controlled and decontrolled drugs in the country. Since the announcement of DPCO 2013, notified on May 15, 2013, almost 857 drug formulations had come under the Price Control

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as on 31st May, 2019. Laws in India specify that all medical prescriptions should give generic medicines and all pharmacies must make them available to patients.

Pradhan MantriBhartiya Jan AushadhiPariyojana Kendra (PMBJP) is a campaign launched by the Department of Pharmaceuticals, Government of India, to provide quality medicines at affordable prices to the masses through these special kendras. PMBJPKs have been set up to provide generic drugs, which are available at lesser prices but are equivalent in quality and efficacy as expensive branded drugs. There are around 5000 such Jan Aushadhi stores in India and by 2020 the government is planning to open another 2500 additional Jan Aushadhi stores.

There is a need for uniform pricing systems for various health interventions, including diagnostics and medicines and ensuring transparency. Reduction in the prices of essential medicines, cardiac stents and knee implants, and availability of medicines at affordable prices through Pradhan Mantri Jan AushadhiKendras are some of the major initiatives taken by the India government to ensure that healthcare is both affordable as well as accessible to the common man.

The Indian healthcare sector is not fully under price control since medical treatment costs and costs of medical tests (diagnosis) are market driven and the service providers also resort to price discrimination in different locations. There is a need to bring price control with regard to medical treatment and diagnostic services in India but there are challenges in obtaining the data base, evolving an acceptable methodology to compute costs and develop standards to bench mark the costs. There is also an equal need to design and enforce quality standards to ensure better quality of service in healthcare. This requires enhancement in the education standards, quality of health infrastructure and adoption of higher technology by the drug manufacturing companies for an overall improvement in the quality of healthcare in India.

### **Shortage of doctors and paramedical staff**

It is estimated that India has shortage of 600,000 doctors and 2 million nurses. In India there is 1 government doctor for every 10,189 people as against the WHO's recommendation of doctor's to population ratio of 1: 1,000. Similarly India has 0.9 hospital **beds** per 1,000 people.as against the WHO recommendation of 5 Beds per 1,000 people. There is only one government dental surgeon per 1,76,004 population - as against the WHO norms of 1:7,500. The data also points towards inadequate hospital infrastructure, and a huge disparity between urban and rural healthcare. The country has 539 medical colleges, 342Colleges for BDS courses and 248 colleges which conduct MDS courses. There has been a total admission of 52,646 in Medical Colleges & 27060 in BDS and 6233 in MDS during 2017-18. There are 3215 Institutions for General Nurse Midwives with admission capacity of 129,926 and 777 colleges for Pharmacy (Diploma) with an intake capacity of 46,795 as on 31st October, 2017.

## Poor health infrastructure

Health infrastructure is the basic support for the delivery of public health activities. It is an important indicator for understanding the health care policy and welfare mechanism in a country. It also indicates the investment priority with regard to the creation of health care facilities. There are 23,582 government hospitals having 710,761 beds in the country. 19,810 hospitals are in rural area with 279,588 beds and 3,772 hospitals are in urban area with 431,173 beds. 70% of population of India lives in rural area and to cater their need there are 156,231 Sub Centres, 25,650 Primary Health Centres and 5,624 Community Health Centres as on 31st March 2017. Urban areas have fewer (government) hospitals, around 3,700, but the majority of the beds totaling above 4.3 lakh are in urban areas as against the overall 7 lakh beds across the country. The shortage of hospitals in rural India is acute compared to the urban places. While there are 6,49,481 villages in India according to 2011 census as on date there are only 28,863 PHCs across the country and just one fourth of the doctors all over the country are serving in villages. There are 732 Districts in India as of 2019 whereas there are only 279 Government Medical colleges and 260 private medical colleges in the country. Also majority of the doctors are not willing to serve in the rural areas and instead prefer urban areas. Main reasons for this phenomenon are lack of adequate infrastructure, poor civic facilities and lack of affordability of the rural population to pay for their healthcare needs.

## Healthcare systems in India

India has two systems viz., traditional medicine and modern medicine. The system of modern medicine is largely regulated by the Medical Council of India (MCI) and governed under Ministry of Health and Family Welfare, whereas traditional medicine - AYUSH (Ayurveda, Yoga, Unani, Siddha, and Homeopathy) - is regulated through Central Council for Indian Medicine (CCIM) and is under the control of an independent ministry of AYUSH of Government of India. There were a total of 10,22,859 MBBS (Modern Medicine) doctors registered with the MCI or State Medical Councils as on March 31, 2017. There were 7,44,563 AYUSH registered graduates as of January 1, 2015, which by 2017 estimated to be 7.6 lac approximately. As on 2017, 1.33 billion of Indian population is being served by 1.8 million registered medical graduates. So, the ratio is 1.34 doctor for 1,000 Indian citizens as of 2017. *This means that India has already reached WHO norm of 1:1,000 doctor population ratio if one takes into account the doctors from modern medicine and traditional medicine, which may sound ironical!!!*

## Preventive Vs Curative Healthcare

In India, a meagre 9.6% of the overall healthcare expenditure goes towards preventive healthcare, whereas 90.4% goes into treating diseases and their complications—amounting to more than Rs 3.6 lakh crore per year. Also, close to

50% of such expenses go towards inpatient beds for lifestyle diseases, especially in urban and semi-urban pockets (according to the IBEF Healthcare, 2014).

### **India's position Globally in healthcare**

India ranks 102 among 117 countries in terms of quality and accessibility of healthcare, behind its neighbours like China, Bangladesh, Sri Lanka and Bhutan, according to a Lancet study. However, in 1990 India's ranking was 153 which improved to 145 in 2016. In 2016, India's healthcare access and quality scored at 41.2 (up from 24.7 in 1990). "Although India's improvements on the HAQ (healthcare access and quality) index been positive from 2000 to 2016, the gap between the country's highest and lowest scores widened (23.4-point difference in 1990, and 30.8-point difference in 2016)," the study stated. According to the study, India performed poorly in tackling cases of tuberculosis, rheumatic heart diseases, Ischaemic heart diseases, stroke, testicular cancer, colon cancer and chronic kidney disease among others.

India is among the 45 countries that have serious levels of hunger. The report also says 21% of the Indian children are under weight. However, the percentage of undernourished people in the population has dropped from 18.2% in 2000 to 14.8% in 2018. The child mortality rate has halved from 9.2% to 4.3%, while child stunting has dropped from 54.2% to 38.4% over the same period. According to Food and Agriculture Organisation (FAO) nearly 190 million Indians suffer from malnutrition and hunger annually.

### **Changing demographic profiles**

In 2013, the elderly comprised 8% of India's population and this is projected to rise to 18.3% in 2050. Globally, ageing is associated with multiple morbidities, particularly the rise of cardiovascular diseases, physical impairments and mental health conditions. Hence, the increasing population of the elderly in India will lead to greater morbidity in the future. Data shows that the age composition of rural areas is changing with an increase in the proportion of the elderly residing in rural areas. This residential pattern is attributed to the out-migration of young persons to urban areas and to the in-migration of the elderly after retirement to rural areas. It will also lead to significant changes in the economic, social and cultural life of the community. Further, these rural areas have limited health services and other infrastructure, specifically geared towards care of the elderly. This adds to challenges of healthcare for the elderly as health systems are not prepared or empathetic to the needs of this population group. India introduced the National Policy on Older Persons to highlight priority domains for wellbeing of the elderly in 1999. Subsequently in 2011, a National Program for Health Care of the elderly was formulated which aims at developing geriatric care in India.

## Universal healthcare

Ayushman Bharat introduced by the Indian government on 23<sup>rd</sup> September, 2018 aims at covering 10 crore poor families based on Socio Economic and Caste Census 2011(SECC) database providing health coverage of 5 lakh rupees per family taking care of almost all secondary care and tertiary care procedures. The scheme clubs two on-going centrally sponsored schemes viz., RashtriyaSwasthyaBimaYojana (RSBY) and Senior Citizen Health Insurance Scheme (SCHIS). As of November, 2019 20,908 hospitals have been empanelled, 62.57 lakh people have been admitted in hospitals for treatment and covering an amount of Rs.9,205 crores under this ambitious scheme.

## Alternative Medicine

Studies indicate around 90 percent of the people in India continue to prefer Allopathy to AYUSH. Studies also reveal that use of AYUSH care is higher among females and among children below age 5 years and elderly persons aged 60 and above. The total expenditure on AYUSH medicine accounted for about 6% of the total medicinal (drugs) expenditure for outpatient care. There is a need to expand the health infrastructure under alternative medicine, enforce the quality standards for accreditation of AYUSH Hospitals, and propagate the availability of health insurance cover for these facilities in order to actively promote alternative medicine that is low cost and affordable to the people.

## Growing market for healthcare in India

The hospital industry in India, accounting for 80% of the total healthcare market, is witnessing a huge investor demand from both global as well as domestic investors. The hospital industry in India is expected to grow CAGR 16-17 percent to reach INR. 8.6 trillion (\$.132.84 billion) by FY22 from INR 4 trillion (\$. 61.79 billion) in FY 17. The hospital and diagnostic centers attracted Foreign Direct Investment (FDI) worth US\$ 6.34 billion between April 2000 and June 2019, according to data released by the Department of Industrial Policy and Promotion (DIPP).

As can be seen from the above though the government is making attempts to improve the healthcare system in India there are several major bottlenecks, issues and challenges that still need to be addressed.

In order to address the gaps in the above mentioned initiatives of the government in India's health care and particularly in rural healthcare the following policy measures are recommended.

1. Setting up one medical college in every district in the country. Providing subsidized / free medical education to the students from rural areas with a caveat to serve in the villages after becoming doctors.

2. Encourage PPP Models in rural healthcare by collaboration between the government, private hospitals and health insurance companies.
3. Ensure every citizen of the country is covered under health insurance through appropriate legislative measures.
4. Make master health checkup mandatory for annual renewal of health insurance cover in order to focus more on preventive health care and thereby reduce the burden of disease on curative healthcare.
5. Creation and maintenance of master health records (i.e., Electronic Medical Records) of all the citizens on real time basis after taking necessary legislative measures that the right to privacy of the people is duly maintained.
6. Government expenditure on healthcare to primarily focus on the following activities- providing the health infrastructure and supporting the initiatives of the private sector in providing health infrastructure, funding the health insurance premium burden of the poor and deserving people.
7. All government hospitals to charge the patients for the health services who in turn will shift this burden to health insurance companies as they are covered under health insurance.
8. Bringing health sector under the concurrent list of the constitution (currently it is under the state list) so that both the centre and the states could enhance their budgetary allocation under the health sector.
9. Abolish all the health schemes (both centre and states) and instead the governments to spend those funds only for the health insurance premium of the people by either fully funding or part funding of the annual health premium depending on a standard guidelines.
10. To bring under price control various health interventions, including diagnostics and medical treatment along with medicines, in due course.

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## Search for an Ingenious Healthcare Model in India

Sunetra Ghatak\*

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### Abstract

*The provision of adequate and equitable basic health services is becoming increasingly difficult due to rapid population growth and lack of available resources. Over the last few years there have been many initiatives to improve the efficiency, effectiveness and equity in provision of healthcare services in the country. Public Private Partnership (PPP) is one such initiative. This paper aims to draw attention if this PPP model is able to connect the demand for healthcare of the Indian population. The paper analyses the availability of healthcare establishments and if the financial mechanism is able to minimise out of pocket expenditure of the people. Finding suggests that current numbers of establishments are not enough and unevenly distributed across states and sector. The establishments are highly correlated in urban. Public-private cooperation depends on state's income but on entirely based on population. We need more health establishments and disperse of facilities across states as well as sector to make the PPP model an ingenious one.*

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### 1. Introduction

In recent times the requirement of better and efficient healthcare facilities is repeatedly being discussed in the literature (Gwatkin, 2000; Joe *et al.*, 2008; Selvaraj and Karan, 2009; Baru *et al.*, 2010). The COVID-19 outbreak has unleashed the need for better healthcare facilities in India. Looking at the other countries' course of actions to save life and livelihood against COVID-19 India has followed its path using its Public Private Partnership (PPP) model. Most importantly, it has opened doors to multiple possibilities in terms of PPP cooperation in the area of telemedicine, online doctor consultation services, development of low-cost medical supplies, mobile apps and other social impact initiatives etc. PPP model is not new and this cooperation has been introduced after seeing the success in the

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infrastructure sector like national highways, power, transport, airports and seaports. Therefore it has been believed that this model will fulfil certain common goals by overcoming the visible limitations prevail in the healthcare in India such as inequality in infrastructure, inefficiency in services etc. (Bhat, 1993; Gwatkin, 2000; Baru, 2002; Baru *et al.*, 2010).

The recent Union Budget has already emphasised the PPP mode of healthcare by announcing to set up of new hospitals and attaching certain medical colleges to existing district hospitals under Pradhan Mantri Jan Arogya Yojana (PMJAY). It proposed to establish hospitals in 112 aspirational districts in Tier-II and Tier-III cities. With the advent of national schemes like Rashtriya Swastya Bima Yojana (RSBY), the Government is increasingly taking on the role of insurer providing a substantial patient base for private providers. Not only that the Central and State Government are working together and took several initiatives to upscale public expenditure on healthcare through some health mission e.g. National Rural Health Mission (NRHM) launch in 2005, National Urban Health Mission (NUHM) launched in 2013. Launching Ayushman Bharat or PMJAY in the year 2018 has promised to provide coverage of 5 lakh per family per year to about 100 million poor and vulnerable families.

Healthcare services are critical to the growth of country's economy. India is one of the fastest growing economies in the world in terms of GDP by securing at over 6.8 percent GDP growth in 2018. The health conditions of Indian population in terms of reducing the infant mortality rate and increasing life expectancy at birth, of course, has improved and yet India's total expenditure in healthcare as a percentage of GDP (about 2 percent) is still one of the lowest in the world. The contribution of private sector in healthcare expenditure in India is around 80 percent and about 94 percent of this amount comprises of Out of Pocket Expenditure (OOPE) on health. As per 75th round of NSS, 2017-18, the average treatment cost per episode<sup>1</sup> stands about 4,452 Rupees in the public sector while the same treatment will cost 5.5 times higher in case of non-profit private sector and 7.2 times in the profit making private sector. Therefore basic health services are becoming increasingly difficult for the common masses. Adding to this challenge rapid population growth, rising income inequality and lack of available resources making the healthcare system inefficient, expensive.

The private sector significantly coexists parallel to the public sector in India (Levesque *et al.*, 2006; Balarajan *et al.*, 2011). On this view point, this paper wants to give an overview of the evolution of the Public Private Partnership model. The objective of the paper is to analyse the existing national level PPP model and evaluate if current public and private establishments are sufficient to support the model. Further the paper will try to examine the financial mechanism under

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<sup>1</sup>excluding transport and other non-medical expenditure

healthcare system to identify whether PPP model is able to reduce the OOPE of the households.

The rest of the paper is organised as follows. Section 2 introduces the methodology and the data used in the analysis. Analysis and discussions are reported in Section 3, followed by conclusions in Section 4.

## 2. Data and Methodology

The present study relied on secondary data from different sources as per the requirement of the discussion. It has used Census of India data of different decades to see the demographic changes. Health infrastructure provision at state level is being analysed through public and private establishments available in the 6th Economic Census, Rural Health Statistics, and ROHINI (Registry of Hospitals in Network of Insurance) database. A number of health facilities are analysed simultaneously with these secondary data to get robust results and more accuracy in the findings.

Data of 6th Economic Census has been used for the year of 2013-14 conducted by the Ministry of Statistics and Programme Implementation, Government of India. According to the broad activity classification, from where 'hospital activities' (NIC 861) has been considered, on the basis of the type of ownership a total of 210576 private establishments and 65828 public establishments are reported at India level.

The Ministry of Health and Family Welfare, Government of India, compiles and disseminates information on the health care delivery system. As on 31st March 2018, Rural Health Statistics database contains 158417 Sub Centres (SCs), 25743 Primary Health Centres (PHCs) and 5624 Community Health Centres (CHCs), 1130 Sub Divisional Hospital, and 764 District Hospitals functioning in the country. We have used the data assuming sub-centres and PHCs are located in the rural areas while CHCs, sub-divisional hospital and district hospitals are located in urban areas.

Another important database used in the current study named ROHINI compiled by Insurance Information Bureau (IIB) of India, which gives information on private hospitals empanelled by insurance companies (or third-party administrators). From this database, we are able to know the number of hospitals enlisted by insurance companies or third-party administrators (TPAs) (or jointly) for providing medical services to people covered by health insurance in India. As of May 2018, about 15439 hospitals which are registered as active hospitals.

With the help of secondary dataset descriptive statistics are analysed while tables and graphs are used to display the data. Further, we use Pearson's product-moment correlation analysis on the basis of total establishments and population per health care facilities to test the spatial location of public and private establishments.

### 3. Results and Discussions

The initiation of PPP is to improve efficiency, effectiveness and equity in the provision of healthcare services in India's health care system. The section starts with the profile of Indian population and discusses how over the time demand for healthcare is increasing. The question of the boon of PPP is being analysed with the help of public and private establishments across states. The focus will be given if this pool of private sector healthcare resources is able to complement the public healthcare system. One attempt has made to know how investment in health (in terms of public health expenditure) can influence the system of health care across states.

#### 3.1. Demographic Changes and Disease Burden

The trend of demographic change, population's disease profile and increasing the incidence of lifestyle diseases like diabetics and cardiac ailments are creating pressure on the demand for healthcare. The proportion of old age population (here 65+) is increasing over time while the proportion of working age population is also increasing (15-64). The life expectancy at birth in India has increased from 60.3 years in 1991-1995 to 68.7 years in 2012-2016. Further, infant mortality rates reduced from 71 to 31 deaths per 1000 live births from 1997 to 2016. Child and adult mortality rates have also declined significantly, and there has been a significant increase in the probabilities of surviving to age 60 and 70. With the increase in the life expectancy, the burden of disease is gradually moving towards non-communicable diseases. The non-communicable diseases are on the rise due to current changes in India's population age structure and improved economic status and lifestyles (Prentice, 2006; Sinha *et al.*, 2010).

**Table 1: Trends in the Age Distribution of the Indian Population**

Proportion of the Total Population	1961	1971	1981	1991	2001	2011
0-14	41.0	42.0	39.5	37.2	35.3	29.5
15-64	55.9	54.6	56.6	58.1	59.6	65.2
65+	3.1	3.3	3.8	4.0	4.8	5.3
Total	100	100	100	100	100	100

*Source: Census of India. Compiled by Author.*

### 3.2. Levels of Health Facilities

With the increase of the demand for healthcare this section tries to analyse the availability of the health infrastructure across states. Using economic census data Table 2 represents the public and private establishments across states where we separate the establishments' location on the basis of rural and urban. It can be observed from the following table of health establishments that public facilities are more dominating in the rural areas rather in the urban while private establishments are highly concentrated in the urban areas. Another interesting feature of the health establishments found from the economic census that the percentage of health facilities are more in urban for the high focus states while taking the aggregate figures. This is a contrast for the non-high focus states, i.e. the health facilities are slightly more located in rural areas than urban. This implies that whether the facility provided by the government or private organisations, ultimately facilities are scarce in rural areas.

**Table 2: Summary of Health Establishments**

States	Public		Private		Total	
	Rural	Urban	Rural	Urban	Rural <i>(figures are in percentage)</i>	Urban <i>(figures are in percentage)</i>
<b>High Focus States</b>						
Bihar	1795	411	3628	3762	56.51	43.49
Madhya Pradesh	788	318	2033	3311	43.74	56.26
Chhattisgarh	755	187	541	3317	27.00	73.00
Odisha	1052	291	1705	4756	35.33	64.67
Himachal Pradesh	2591	498	3343	5165	51.17	48.83
Rajasthan	1798	326	3598	3933	55.89	44.11
Jammu & Kashmir	2894	540	4829	5295	56.96	43.04
Uttar Pradesh	2324	415	4441	5237	54.48	45.52
Jharkhand	1514	199	1754	1984	59.95	40.05
Uttarakhand	2363	352	2785	4351	52.26	47.74
<b>Non-high Focus States</b>						
Andhra Pradesh	95	13	246	210	60.46	39.54
Kerala	860	119	1572	1236	64.22	35.78
Maharashtra	996	164	1894	2104	56.03	43.97
Gujarat	1134	156	1657	2348	52.71	47.29

Punjab	2970	437	4870	5820	55.61	44.39
Haryana	2547	358	3342	3859	58.27	41.73
Tamil Nadu	441	90	1039	1352	50.65	49.35
Telangana	95	6	183	37	86.60	13.40
Karnataka	592	139	1273	1511	53.06	46.94
West Bengal	1614	266	2734	4147	49.63	50.37

Source: *Economic Census, Government of India. Compiled by Author.*

### 3.2. Relationship between Population and Number of Health Facilities

Health establishments are further analysed at per capita term. India is a large country with a huge number of population and these populations are unevenly distributed across the size of the states. This section investigates the relationship between public and private establishments according to their spatial location.

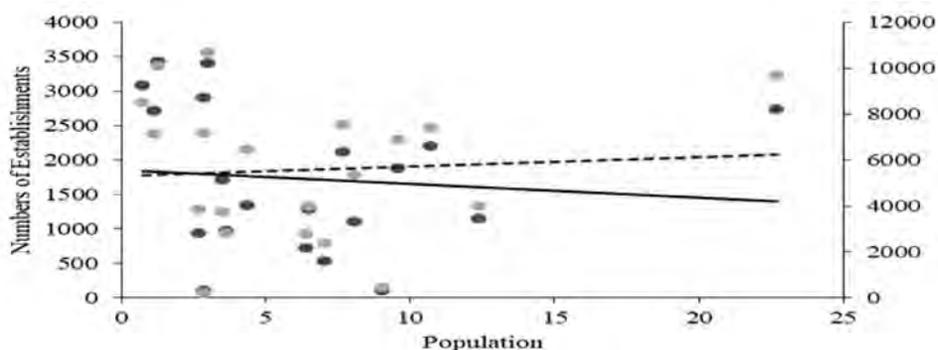


Figure 1: Relationship between Health Establishments and Population

Source: *Economic Census, Government of India. Drawn by Author.*

As per the state's population, we have plotted the public and private establishments respectively. It is clear from the above figure (Figure 1) that population and health facilities are correlated but the correlation is strong for private establishments. The correlation is negative for public establishments with the respective state's population indicated through the solid black line in the diagram. But what threatens is that the distribution of health care facilities is not entirely based on population. For example, Bihar, Uttar Pradesh have large numbers of the population as 10.69 crores, 22.68 crores respectively, yet has almost same establishments as Punjab with population 2.98 crores and Haryana with 2.85 crore population. This situation, therefore, negates the principle of equity and social justice and government yet to provide sufficient health coverage as per the population need in these selected states.

We analyse the coexistence (if any) of the public and private establishments in terms of population to see how effective PPP model is. Table 3 shows the results of pears on product-moment correlation coefficient with the significance of different combinations of existence. The significant correlation coefficients are reported with their level of significance. Under economic census, public and private establishments are highly correlated showing 0.997. The correlation is strong enough when we include all the data sets in one variable to get total public establishment versus total private establishments (correlation coefficient 0.759). Even the establishments are coexisting at urban areas by showing the value of 0.956 and 0.513 in a rural area.

**Table 3: Results of Coexistence of Establishments at State Level**

Factors	Hospital Activity _Public <sup>#</sup>	Hospital Activity _Private <sup>#</sup>	Total Public	Total Private	Urban Public	Urban Private	Rural Public	Rural Private
Correlation Coefficient	0.997* (0.000)		0.759* (0.000)		0.956* (0.000)		0.513** (0.021)	

Source: #Economic Census; RHS, Government of India, ROHINI. Calculated by Author.\* denotes statistically significant at 1 percent level, \*\* denotes statistically significant at 5 percent level, and \*\*\* denotes statistically significant at 10 percent level.

### 3.3. Financial Mechanism

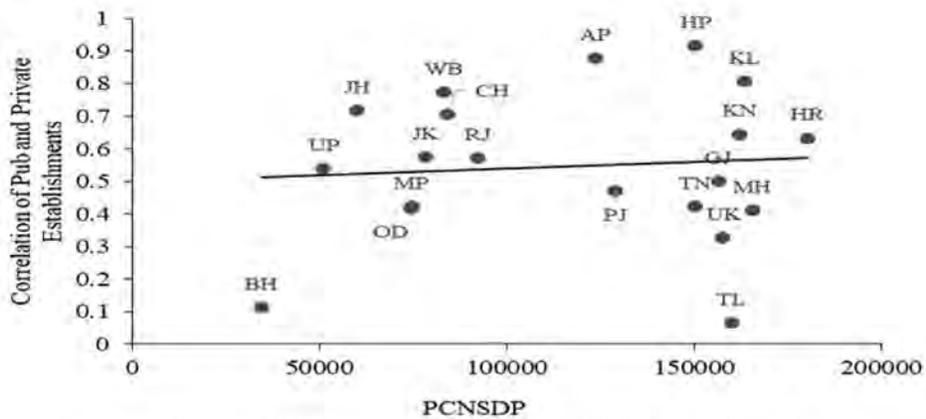
The above analysis raises one question that if this coexistence of the public and private health providers or PPP cooperation actually able to reduce the Out of Pocket Expenditure (OOPE) of the households. Assuming that private health services are act as complementary to the health system, insurance is being designed to take care of all insured person whether they are availing public or private services. The government expenditure on health and the OOPE of the households on the year 2017-18 are given in the following Table 4 to compare the expenditure gap per head. We see that what patients shell out from their pockets is higher of what the governments spend on public healthcare in India for each state. For example, in per capita terms, while the governments spend 652 Rupees on each citizen over healthcare, the individual OOPE stands at 1997 Rupees in case of Uttar Pradesh. This implies that the private system is not enough to minimise OOPE until we have evenly distributed infrastructure. We have calculated the correlation between these two sides of expenditures across high focus and non-high focus states, the results show that the correlation for high focus states stands at 0.449 and 0.457 for non-high focus.

**Table 4: Difference between Public Expenditure and Household OOPE on Health**

States	Public Expenditure in * Health 2017-18	Out of Pocket Household Health Expenditure 2017-18#
<b>High Focus States</b>		
Bihar	526	625
Madhya Pradesh	794	1131
Chhattisgarh	1353	1035
Odisha	1208	1633
Himachal Pradesh	2408	3165
Rajasthan	1223	1466
Jammu & Kashmir	2016	934
Uttar Pradesh	652	1997
Jharkhand	734	1557
Uttarakhand	1419	867
<b>Non-high Focus States</b>		
Andhra Pradesh	687	1685
Kerala	1707	5506
Maharashtra	938	2097
Gujarat	1075	1243
Punjab	922	2600
Haryana	1079	2008
Tamil Nadu	1428	1843
Telangana	1675	2265
Karnataka	1096	1290
West Bengal	829	2894

Source: \*State Finances, Reserve Bank of India, Government of India; #National Sample Survey, 75<sup>th</sup> Round; \*# figures are in Indian Rupees at per population. Compiled by Author.

The relation between income and the correlation coefficient of health facilities is showing a positive trend which is represented in the following figure (Figure 2). The assumption that private can play a key role in the insurance policies is true but this will not go to help a person unless we have an adequate and even distribution of health facilities.

**Figure 2: Relationship between Income and Coexistence of Health Facilities**

Source: *Economic Census, RHS, Government of India; ROHINI. Drawn by Author.*

#### 4. Conclusions

PPP model has been introduced with the aim to connect the large pool of private sector healthcare resources and draw them into the process of nation building. There is one key difference in implementing this model in case of India with other countries. In other countries it has been implemented during the time of crisis to minimise the burden of state funding for the health sector, while in India it is being introduced to tackle the mismanagement and technical inability, not for shortage of funds. In this paper, we tried to see whether our system is capable to get boon of the PPP model successfully.

Although it is early to conclude whether PPP in healthcare is a boon or bane, this paper pointed out some areas of concern in the healthcare system. Findings from the study states that non-communicable disease are on the rise due to current changes in India's population age structure and improved economic status and lifestyles. This automatically raises the demand for healthcare. The analysis special distribution of public and private establishments represents that they formed cluster in the urban areas. The correlation between public and private establishments is strong in urban areas but it is inconsistency for rural. Further findings state that existing establishments are unevenly distributed and unable to minimise out of pocket expenses as health establishments are confined to certain areas. The establishments are solely based on state's income and the distribution of health care facilities is not entirely based on population. Thus we need infrastructure development, active regulatory system and efficient monitoring and enforceable system to make this model ingenious one. After this poor will receive the services they need and at a cost they can afford, and providers will receive a fair compensation for their services.

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# Understanding the Key Trends in Health Care Hospital Administration and Public Health

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## Abstract

*Health care, hospital administration and public health are the arms of health care that encompass both the private and public health care domains. Healthcare, and its delivery has been transformed over the last three decades and the traditional hospital care, has now been replaced by a variety of options, giving rise to several opportunities in the field of health care administration. The current issues, which are, opportunities too, can be outlined amongst others, are in the fields of, training and deployment of manpower, devices, technologies(s), innovation in delivery networks, amongst others.*

*What was relevant then is now enhanced and made available across larger populations with greater ease of accuracy and delivery. Some of the major changes that guided the last decade both globally and locally were in the fields of mergers and acquisitions with private equity being the new global health accelerator. This Paper discusses some of the key trends in Health Care Hospital Administration and Public Health.*

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## 1. Introduction

Health care administration is driven by the trends in strategy, operations, and the future. These are defined by patterns in which they are consumed and by the current resources both fiscal and manpower allocation. Outlined are some of the trends that currently exist and will progress based on their applicability at the health care at a systems level - in both the public and private care domain.

India is a fast growing economy and is facing a triple burden of disease (high maternal mortality rate, infant mortality rate and infectious diseases, the growing burden of non-communicable diseases and the emerging or re-emerging infections such as TB, dengue). With the growing disease burden it is essential to streamline the

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sector and shape the impending needs of over a billion people, who use the services of both public and private sector.<sup>1</sup>

Healthcare in India is provided by the public and private sector facilities as the two major players. The private healthcare sector comprises of state of art tertiary hospitals, medical colleges, nursing homes, standalone clinics, pharmaceutical and medical device companies, clinical trials, telemedicine, medical tourism, health insurance and health informatics. The publicly financed healthcare system also comprises of several prestigious teaching institutions, medical colleges, hospitals of varied capacity, primary health centers, community interfacing facilities and medical innovation and research institutions.<sup>2</sup> This wide spectrum of facilities are however not regulated and managed.

## **2. Shift from ‘Programmatic thinking’ to ‘Systems thinking’**

Public Health utilization worldwide is shifting from a programmatic fragmented approach of disease specific interventions to now taking a coordinated and comprehensive systems approach. Today, the health systems of high, medium, and low-income countries alike confront new challenges and opportunities. In many high-income countries, demographic change, including low birthrates and the growing number of elderly, are putting an increasing stress on health systems. In low and middle-income countries, there is an increasing demand for improved access to quality health services due to rising incomes. Indeed, all countries struggle to deliver high quality, accessible, and equitable health benefits to their people at an affordable cost. At the same time, new medical and information technologies offer opportunities never available to meet these demands.

Indian healthcare system is replete with vertical healthcare programs often running in silos. This programmatic approach those is disease specific (tuberculosis, AIDS, leprosy etc.), with each system lacking any obvious interlinkage. Neglecting the Bhole Committee’s suggestion of a Comprehensive Primary Care System we opted for a fragmented system. We have 36 vertical programs, and these include National Dialysis Programme, National Mental Health Program, National Program for Prevention and Control of Cancers, Diabetes, Cardiovascular Diseases and Stroke, National Tuberculosis Elimination Program and so on.

It is time to dismantle this and adopt the health systems approach. This approach was initiated by the WHO in 2007 and allows for better allocation and improves efficiency of resources. The main resources that are usually tracked as a part of the systems approach are areas of service delivery, finance, generation of human resource. The initial thinking for this approach arose from the report of Institute of

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<sup>1</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6334557/>

<sup>2</sup> <https://www.investindia.gov.in/sector/healthcare>

Medicine the quality chasm which established a discrepancy in the state of patient safety and the concerning discrepancy between the care that was possible and that which many patients were receiving, pointing at severe quality and systemic challenges.

The systems approach to health can be outlined as one that applies scientific insights to understand the elements that influence **health** outcomes; models the relationships between those elements; and alters design, processes, or policies based on the resultant knowledge in order to produce better **health** at lower cost.<sup>3</sup>

With Ayushman Bharat, which will be discussed in the subsequent sections, Indian Healthcare has taken its journey to a systems approach.

### **3. Commitment to achieve Universal Health Coverage (UHC)**

The effort today globally is to provide essential, quality health services. Derived, from the millennium development goals are the sustainable development goals. The major focus on health as a part of these goals, globally, lies in providing universal health coverage, access to all in need. Estimates suggest that in India, around 50 million households fall in poverty annually on account of out of pocket healthcare expenditures<sup>10</sup>. One of the reasons for high rate of out of pocket expenditure, is limited access to healthcare in public sector, compelling patients to seek care in the more expensive, private sector.

The UHC coverage aims at enabling access to the whole gamut of health care services, from promotion, prevention, treatment, rehabilitation and palliative care thereby addressing all the significant causes of death, and suggest way in which health care can be accessed to improve health outcomes. This translates into a payment system that will demand quality care at affordable costs. The health care provider, in this case often the governments seeks models like strategic purchasing, another trend to enable the providers to be efficient and effective, allowing the patient to gain maximum advantage. An example of this is the Ayushman Bharat, in India, that was initiated to integrate all the areas of health care administration, keeping universal health coverage as a goal.

### **4. Ayushman Bharat - step toward Universal Health Coverage**

The goal of universal health coverage (UHC) as stated in the UN Sustainable Development Goals (SDGs) is one of the most significant commitments to equitable quality healthcare for all. In doing so the nations need to strive toward including financial risk protection, access to quality essential health-care services and access

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<sup>3</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6502599/>

to safe, effective, quality and affordable essential medicines. India moved a step closer towards our commitment to the SDGs, when in 2018 the country launched a national health protection scheme, Ayushman Bharat, to achieve UHC.<sup>45</sup>

Ayushman Bharat through its Pradhan Mantri Jan Arogya Yojana (PMJAY) initiative, will provide health insurance to around 40 percent of the country's population - nearly 500 million people, or roughly the equivalent of the entire population of the European Union. To strengthen the weak primary health care the government is also establishing health and wellness centres (HWCs), which will cover the triple burden of diseases. The idea is to also ensure continuum of care between primary and tertiary levels.

In its first year of implementation, Ayushman Bharat has reached close to 3.9 million Indians who have taken advantage of cashless treatment, resulting in a savings of \$1.6 billion for the benefitting families. As such, progress towards the SDG is steady for a nation with 1.3 billion people.<sup>6</sup>

A crucial component of Ayushman Bharat is the strategic purchasing of secondary and tertiary healthcare services from the private sector.

Evidence suggests that there needs to be a dynamic interaction between the factors the forces patients towards private sector in India. The providers of better quality healthcare, is dominated by private sector and the public sector services have declined over the years. Intervention to allow access to these by purchasing of services is one way of doing so. high share of private expenditure as compared to public expenditure in Total Health Expenditure, and (iii) scarcity of public services on account of deteriorated public health sector. For example, private sector accounted for 75 per cent of total outpatient visits and 62 per cent of total inpatient visits in India in 2014 and the contribution of OOP payments as per cent of THE was 59% in 2016.<sup>7</sup>

Given such a scenario, it is desirable to move towards UHC-based health system where complex and dynamic private sector is efficiently regulated and market competition and choices are used as tools to enhance quality of care and reduce cost of care. Given the fact that social determinants of health play key role in equity, all efforts should be made for multi-stakeholder engagement in design and

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<sup>4</sup> <https://www.who.int/sdg/targets/en/>

<sup>5</sup> <https://www.pmjay.gov.in/?page=6>

<sup>6</sup> <https://health.economictimes.indiatimes.com/news/policy/ayushman-bharat-helped-39-lakh-people-save-rs-12000-crore-varadhan/70776652>

<sup>7</sup> <https://www.telegraphindia.com/india/health-spend-fall-tied-to-private-cover/cid/1741261>

delivery of an inclusive and pluralistic UHC-driven health care system.<sup>8</sup> Healthcare consumer financing is an emerging area to address the challenges of out of pocket expenditure.

*Ayushman Bharat needs to enforce the implementation of quality measures from the empaneled providers and educate the beneficiaries of these provisions. Then there is the opportunity to drive quality from payer and demand sides*

#### 4.1. Health financing in India - the context

A major health episode can drive an entire family into abject poverty and change their destiny. What contributes majorly to this is that they have to spend from their pocket and are not covered under any model of financing. To take the example of India, the National Health Accounts Estimates for India 2016-17 suggests that 59 percent of India's total health expenditure is borne out of pocket by patients and their families.<sup>9</sup> About 46 million households incurred catastrophic health expenditure<sup>10</sup> in 2011-12. The most common health conditions leading to impoverishment were cancers, injuries, cardiovascular, genitourinary, and mental disorders. About 47% and 31% of inpatient care in rural and urban India were paid by loans and sale of assets.<sup>11</sup>

The Ayushman Bharat Pradhan Mantri Jan Arogya Yojana is a promising development in India's steps toward universal health coverage. Many states also have social health insurance schemes for select secondary and tertiary care services. However, high levels of out of pocket payments for certain diseases, populations, services will continue to persist because these programs are phased cover a basket of essential health needs initially. We require a set of complementary solutions to plug the gaps in access and affordability that are not serviced by the traditional financing sources such as government funding and private insurance.

#### 4.2. Health financing solutions for improving access to healthcare

A range of latest technologies are revolutionizing the financial system in India. These alternate mechanisms include blockchain and cryptocurrency, mobile

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<sup>8</sup> <https://www.weforum.org/agenda/2019/10/role-of-government-in-healthcare-in-india/>

<sup>9</sup> [http://nhsrcindia.org/sites/default/files/practice\\_file/NHA%20Estimates%20Report%20-%20Final%20Web%20Optimized%20PDF%20Version%20-%202022.11.17.pdf](http://nhsrcindia.org/sites/default/files/practice_file/NHA%20Estimates%20Report%20-%20Final%20Web%20Optimized%20PDF%20Version%20-%202022.11.17.pdf)

<sup>10</sup> Catastrophic healthcare expenditure here is considered as healthcare expenditure higher than 10% of the total yearly family income.

<sup>11</sup> <http://fightchronicdisease.in/2017/08/21/healthcare-financing-india-challenges-solutions-ahead/>

transactions, innovative investment services, and the use of machine learning, artificial intelligence or other big data analytics etc. and are broadly termed Fintech<sup>12</sup>. The post demonetization period has seen the emergence of many fintech solutions, example PayTM., PhonePe, GooglePay etc.

The public health expenditure in India (between the center and state governments) has remained constant at approximately 1.3% of the GDP between 2008 and 2015, and increased marginally to 1.4% in 2016-17. This is less than the world average of 6%.<sup>13</sup>

Including the private sector, the total health expenditure as a percentage of GDP is estimated at 3.9%. Out of the total expenditure, effectively about one-third (30%) is contributed by the public sector. This contribution is low compared to other developing and developed countries. Examples include Brazil (46%), China (56%), Indonesia (39%), USA (48%), and UK (83%).<sup>14</sup>

## 5. Digital Health Transformation

National level Digital Health strategies and regulations standards are now being adopted for interoperability of health data across entire system and their impact on all aspects of health systems - payer systems, provider systems, and governance systems. The National Health Stack (NHS) is a digital infrastructure built with a deep understanding of the incentive structures prevalent in the Indian healthcare ecosystem. The NHS, a set of building blocks which are essential in implementing digital health initiatives, would be "built as a Common Public Good" to avoid duplication of efforts and successfully achieve convergence. Also, the NHS will be "built for NHPS but designed beyond NHPS" as an enabler for rapid development of diverse solutions in health and their adoption by states.

The key components of the National Health Stack are—

A. National Health Electronic Registries: to create a single source of truth for and manage master health data of the nation;

B. A Coverage and Claims platform: building blocks to support large health protection schemes, enable horizontal and vertical expansion of RSSM by states and robust fraud detection.

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<sup>12</sup><https://healthitanalytics.com/news/why-healthcare-should-study-up-on-lessons-learned-in-fintech>

<sup>13</sup><https://www.telegraphindia.com/india/health-spend-fall-tied-to-private-cover/cid/1741261>

<sup>14</sup><https://thewire.in/health/who-is-paying-for-indias-healthcare>

C. A Federated Personal Health Records (PHR) Framework: to solve twin challenges of access to their own health data by patients and availability of health data for medical research, critical for advancing our understanding of human health.

D. A National Health Analytics Platform: to bring a holistic view combining information on multiple health initiatives and feed into smart policy making, for instance, through improved predictive analytics;

E. Other horizontal Components: including, and not restricted to, unique Digital Health ID, Health Data Dictionaries and Supply Chain Management for Drugs, payment gateways etc shared across all health programs.<sup>15</sup>

### 5.1. Digital technology revolutions and their impact

Emergence of e-pharmacy, telemedicine, online doctor comparison & discovery platforms and chronic disease management apps have found widespread reception and acceptance among consumers. Adoption rate of such technologies have been higher in metros as compared to non-metros primarily because of lack of awareness, education and limited knowledge and technological dexterity.

E-pharmacies provide wider reach, accessibility, cost effectiveness and convenience, even in remote locations. Remote consultations powered by tele-medicine platforms have redefined the healthcare experience especially in rural areas with high dependency on unqualified medical practitioners. This provides effective medical care and access to trained professionals at 30 per cent lesser cost than a traditional visit to a nearest hospital.

Digitizing patient profiles and health records improve the overall diagnosis and patient care. Apart from a few urban pockets, medical professionals are yet to embrace the EHR (Electronic Health Record) movement. EHRs help medical professionals make an informed diagnosis reducing the risk of errors.

Sophisticated Artificial Intelligence & Machine Learning platforms that power most health-tech companies today use the data assimilated, predict trends, assess patient record, improve diagnosis and provide evidence-based care at different stages of a patient's journey.<sup>16,17</sup>

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<sup>15</sup>[https://niti.gov.in/writereaddata/files/document\\_publication/NHS-Strategy-and-Approach-Documents-for-consultation.pdf](https://niti.gov.in/writereaddata/files/document_publication/NHS-Strategy-and-Approach-Documents-for-consultation.pdf)

<sup>16</sup><https://technology.siliconindia.com/viewpoint/how-digital-revolution-is-transforming-healthcare-industry-in-india-nwid-18061.html>

<sup>17</sup><https://knowledge.wharton.upenn.edu/article/technology-changing-health-care-india/>

## 6. Way forward

Some of the remarkable changes that took place in the private health care space are by the way of a large number of single and multi-specialty hospital chains, supported and financed by private equity and social impact investors. In a similar way the shift of the government through its social welfare schemes provided access to the best quality care. The Indian healthcare industry is expected to be valued at Rs. 19.57 lakh crore (US\$ 280 billion) by the end of 2020. Rising purchasing power with health awareness, increased prevalence of lifestyle diseases and improved access to insurance are the key contributors to growth. Health insurance is gaining momentum in India.<sup>18</sup>

Mass mergers and acquisition like CVS being acquired by AETNA, Optum being acquired by Data Vita Medical; consolidation and entry of Parkway healthcare by way of investing into growing hospitals in India, have given rise to a new culture amongst both the providers and the consumers both. This has been the new health care growth accelerator. The private health care saw changes in the way hospitals became an architect's sub-specialization to build green buildings with specified hospital design to improve the patient outcomes.

"State Health Investment Plans" should be integrated as part of HSPs aiming for progressive strengthening of infrastructure, human resources, and information systems. These plans must be realistic based on the self-assessment of state's health system, with a clear emphasis on building capacity, inducting mid-level providers, contracting private providers, especially in the urban areas, and ensuring availability and access to essential medicines, vaccines, and medical products. An integrated health information system with the capability for interoperability is critical, in which each transaction could be captured using electronic health records and a unique health identifier for patients and providers to ensure transparency and quality of care.

Appropriate focus should be laid on strengthening primary health-care-centered integrated service delivery. The NHP-2017 proposal for establishment of "Health and Wellness Centers" to provide a comprehensive package of essential services by a primary care team, headed by a mid-level provider, is an appropriate model for the Indian context.<sup>19</sup> The primary care provider should be the entry point for seeking care and should be effectively linked with secondary and tertiary providers to ensure a continuum of care. The beneficiaries should be free to choose the providers who could initially be paid on a fee-for-service basis. In addition, capitation or blended models with performance management framework can be introduced later with increase in demand for health services.

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<sup>18</sup> <https://www.ibef.org/industry/healthcare-presentation>

<sup>19</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6319280/#ref18>

The government should prioritize prevention and health promotion through investing more for improving coverage and driving multisectoral actions for addressing NCDs, road traffic injuries, and antimicrobial resistance. For timely detection and management of health security threats and building on the learning from “Integrated Disease Surveillance Programme,” the disease surveillance and response systems must be strengthened by involving a well-coordinated network of public and private providers, laboratories, hospitals, and surveillance cells manned by qualified workforce. These must be connected to a nationally networked real-time web-based reporting and feedback system, led by the “National Centre for Disease Control.”

Evidence shows that “Purchaser Provider Split,” i.e., separating the function of purchaser and provider leads to benefits such as improved efficiency and cost containment through negotiating better package rates, tackling information asymmetry in health, as well as indirect regulation and quality assurance. Given India’s federal structure, the purchasing bodies should be at the state level (state health agencies), supported by a national standard-setting body (national health agency). Equally important is to reduce inefficiencies in the health sector and improve public finance management.

The massive financial opportunity with the political focus poses the health system with need to strengthen its administration and management systems more than ever. Skills related to community medicine, public health, and hospital administration can alter several aspects like planning, organizing, decision making, need assessment, resource allocation, disease and disaster management, evaluation and sustainability for the future.

## **Equity in Health Care: Analysis of the Tribal Health Initiatives run as Public Private Partnerships in the State of Odisha**

Dr Subodh Kandamuthan\*

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### **Abstract:**

*It is well documented that 75 percent health care needs of a community in a country are satisfied by the primary health care and ironically this is also the level of care which is most neglected in developing countries especially India. In India, the problem we face in health care is insufficient funds coupled with poor outcomes. Given the available evidence to justify significant allocation of public funds to the health sector, the inability to spend allocated funds or the lack of absorptive capacity is a matter of deep concern especially for the poorly performing countries of the world. Many countries in South Asia and Africa and different State Governments in India have now recently opened up to alternative service delivery mechanisms in health like Public Private Partnerships to make health accessible to the poorest of poor in the country. With malnutrition, lack of clean drinking water, poor sanitation, poverty, inaccessibility etc plaguing the tribal community, Implementation of health policies becomes a challenge. In the last ten years Public Private Partnerships were used as a medium to remove social taboo and improve access to health care among the tribals in the country. The objective of this study is to evaluate the effectiveness of various PPPs in tribal health and the lessons learnt. Primary and Secondary data analyses were done to evaluate the PPP projects in tribal health in the state of Odisha. The various PPP projects considered for evaluation are PHCs run by NGOs as PPP Models and Maa Gruha (Maternity Waiting Homes) by NGOs. Primary Data was collected from state level and from three tribal districts. The study clearly indicates that the PPP models ( Maa Gruha Scheme and the PHC run by NGOs) in Tribal health in Odisha have shown considerable and significant improvements in the health status of the tribal populations but there is still a lot to be achieved. However the District/State administration needs to carefully select capable NGOs who would genuinely indulge*

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*in innovations & outreach activities. It is not just the private partner that needs to be responsible & accountable for a successful PPP but the public partner also needs to fulfill its duties in a time bound fashion. There has to be better performance indicators and monitoring and evaluation has to be strictly undertaken by the Government.*

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## **Background**

It is well documented that 75 percent health care needs of a community in a country are satisfied by the primary health care and ironically this is also the level of care which is most neglected in developing countries especially India. In India, the problem we face in health care is insufficient funds coupled with poor outcomes. The countries like India have started the National Rural Health Mission (NRHM) and recently the National Health Mission as an entirely new programme bringing with it fresh allocation of funds. Given the available evidence to justify significant allocation of public funds to the health sector, the inability to spend allocated funds or the lack of absorptive capacity is a matter of deep concern especially for the poorly performing countries of the world. Many countries in South Asia and Africa and different State Governments in India have now recently opened up to alternative service delivery mechanisms in health like Public Private Partnerships to make health accessible to the poorest of poor in the country.

In this current age, when health is expected to be equitable and sustainable; Odisha seemed lost in time where health care still remains a dream for the tribals in the state. With malnutrition, lack of clean drinking water, poor sanitation, poverty, inaccessibility etc plaguing the tribal community, Implementation of health policies becomes a challenge.

Healthcare in India is a story of insufficient resources and poor outcomes. Investment is well below WHO guidelines in both qualitative and quantitative terms. Bed density is low (less than 1.5 beds per 1000 persons as compared to WHO guideline of 3.5), doctors few (less than 1.8 per 1000 as compared to WHO guideline of 2.5), and out of pocket spend high (65% as compared to an average of around 40% for low income countries). However when it comes to rural and tribal areas, the country lags even further behind, with around 30% of the rural and tribal population having to travel over 30km for treatment. With low salaries, insufficient incentives, lack of career growth, inadequate training and inconsistent policies, the majority of the medical workforce chooses not to practice in the formal sector. Universal healthcare offers the one solution, by extending access to healthcare as widely as possible and providing quality care through minimum standards.

In the last ten years Public Private Partnerships were used as a medium to remove social taboo and improve access to health care among the tribals in the country.

PPPs are emerging as an attractive strategy for leveraging the strengths of multiple sources in order to address health issues in low and middle-income countries. The promise, potential and challenges associated with PPPs are illustrated through examples of partnerships in global health, where particular emphasis is placed on strategies for public accountability, risk management, and governance. The purpose of this paper is to contribute to the needed effort to address this gap in the literature on PPPs in tribal health. Such a contribution, in turn, would be expanding our understanding of PPPs in general and bridging the divide between theory and practice in the fields of tribal health.

Odisha Health and Family Welfare Department initiated lot of PPP initiatives for Tribal health in Odisha through the National Rural Health Mission, National Urban Health Mission.

### **Objective of the Study**

The objective of this study is to evaluate the effectiveness of various PPPs in tribal health and the lessons learnt.

Methodology - Primary and Secondary data analyses were done to evaluate the PPP projects in tribal health in the state of Odisha. The various PPP projects considered for evaluation are PHCs run by NGOs as PPP Models and Maa Gruha (Maternity WaitingHomes) by NGOs. The primary analysis included collecting and analyzing primary data from various stakeholders including the NGO, health officials, beneficiaries and secondary data like baseline survey, monthly reports, annual reports, MIS data etc. The quantitative data on infrastructure, manpower availability, services like OPD/IPD, Institutional delivery, outreach services like Focus group discussions and health camps done were collected over the last three years. The qualitative data analysis included key informant interviews with both patients availing the services and health officials, ASHAs, ANMs along with NGO officials and district officials. For each tribal health scheme run as PPP model, Data was collected from state level and from three tribal districts. Field survey was undertaken in ten Maa Gruha PPP projects in three tribal districts ( Gajpati, Kandhamal and Raygada) and six PHC PPP projects in three tribal districts ( Malkajgiri, Ganjam and Kandhamal) to get first hand information of the PPP models and they were analysed. The primary survey for the study was undertaken in 2017-18 and had the approval of the Health Department of Odisha.

FINDINGS - Government of Odisha ever since the implementation of National Rural Health Mission articulated the need for collaborating with NGOs and private agencies to provide and facilitate the use health service delivery in hard to reach and underserved areas like PHCs in tribal and remote rural areas. The collaboration with NGOs will ensure promotion of the Government and provide a platform to manage PHC and implement curative, promotive and preventive health services.

Thus PPP has emerged as one of the important strategies for health sector reforms in Odisha. NRHM provides a unique opportunity to expand partnerships with unconventional partners to ensure the maximum outreach to marginalized people and to meet the growing needs for health services including RCH-II and other national health programmes.

Presently 29 PHCs are managed under PPP, out of which 20 PHCs are being managed by NGOs and 09 by two corporate sectors. The partnership is established at 90:10 ratio (NRHM-NGO). The NGO contributes 10% of the project cost. There is a provision of Grant-in -Aid of Rs 14 Lakhs per annum/PHC. There is no Govt. grant-in-aid provision for PHCs managed by the corporate sectors as they are managing them out of their CSR fund. The implementary partners are the NGOs and the corporate sectors.

### **PPP Initiatives in Health Sector in odisha**

PPP has emerged as one of the important strategies for health sector reforms in Odisha. Initiatives have been taken by NRHM, Health Dept. Odisha to undertake different PPPs in meeting the growing needs for health services and other national health programmes like malaria, T.B , ETC. A society has been formed and registered in the name of 'ODISHA PPP TECHNICAL SOCIETY' to assist the state PPP cell and to discharge the functions of the Technical secretariat as laid down in the Odisha PPP policy 2007.

Some of the ongoing PPP arrangements of NRHM, Health and Family welfare Dept., Govt of Odisha include the following;

1. Contracting out primary health centre.
2. Maa Gruha PPP scheme
3. Janani Express.
4. Arogya Plus PPP Project
5. Mother NGO (MNGO)- Service NGO (SNGO) programme.
6. Urban health centres for slum population.
7. PPP in malaria control.
8. Accreditation of private NGO hospitals for institutional delivery.
9. Capacity building of ASHA involving- MNGO/FNGO.
10. Outsourcing cleaning and security services at Health Institutions.

The study showed that there have been considerable improvements under the PPP initiatives in health care in tribal areas of Odisha. The Janani Express and Maa

gruha schemes have been important factors for rise in the number of institutional deliveries in the state. Pregnant tribal women availed free of cost decentralized referral transport along with a free stay at the maternity centres. With respect to Janani Express, the vehicles took considerable time in reaching the beneficiaries and back to health facilities especially where road connectivity is still an issue which affected outreach to inaccessible areas. . The vehicles were also not completely equipped to deal with emergencies during the travel. The incentives in place for drivers and other staff were supposedly not in practice too. Arogya plus project has greatly improved the accessibility of tribals to health services but the major issues were the irregular and infrequent visits by the units which disturbed the continuum of services and a lack of proper diagnostic equipments, drugs & supplies on board. The scheme struggled to retain staff and maintain records.

The Maa Gruha Scheme as PPP with NGOs and rural PHCs run as PPP are considered for detailed analysis in this study.

### **Maa Gruha PPP project**

It is a temporary home for expectant mothers where they can wait for safe delivery. On onset of labour, they are to be shifted to nearby health facility having BeMOC facilities for delivery. No post-partum cases will be allowed to stay at this Home. Ideally it should be located nearer to the hospital.

### **Salient Features**

- Accommodation facilities for expectant mothers & her escorts\*.
- Provision of food for expectant mothers, dependants & escorts.
- Lady Health Care Assistant for attending cases in shifts.
- Provision for shifting of cases from Maternity Waiting Home to hospital.
- Regular health check-up by doctor.
- Health education sessions through IPC & Audiovisual aids.
- Recreation facilities at Maternity Waiting Home like TV, CD player etc.
- Client friendly environment & support.

### **Escort:**

- She / He may be her dependant, relative.
- She may also be ASHA/ Equivalent Worker of that area.

**Maximum 2 escorts are to be accepted to remain with the client.**

**Rationale:** Geographical barrier/Lack of communication hinders transportation of expectant mothers to hospital in the last stage of labour or in emergency. Suitable place & cost factors involved in staying outside before delivery is also not up to their reach because of their poor economic status. So, in spite of provision given under JSY, institutional delivery is not reported to have increased in areas i.e. especially in difficult out-reach pockets.

These problems can be approached through establishing **MAA GRUHA** (Maternity Waiting Home) especially for people living in most difficult pockets.

**Objectives:**

- To establish alternative support infrastructure for addressing communication problems in difficult tribal pockets for ensuring institutional delivery.
- To increase institutional delivery in the difficult tribal pockets.

**Intake capacity of the Maternity Waiting Home**

It will accommodate 6 pregnant mothers at any point of time & average 20 cases in a month. Under no circumstances, cases coming for admission are to be rejected.

If admission is more than the sanctioned strength, then the expenditure incurred on such cases with all personal details & related documents may be placed before the Executive committee, ZSS for approval for reimbursement under RCH-II Untied fund.

**Period of stay**

- Cases may be advised to be admitted in the home for at least **7-10 days** before the expected date of delivery or as advised by the Medical Officer.
- Readmission of expected mother may be permissible up to 10%, In case of discharge without delivery after staying 1 week more in Maa Gruha.

**Target and focus areas of Client**

- List of difficult villages may be identified by taking the following criteria, and the final list has to be approved by the ADMO (FW) & DPM of the concerned District. This copy has to be circulated to CDMO, DPM & NGO working for Maternity Waiting Home.
- The criteria for selecting the NGOs for implementation of Maternity Waiting Home are as follows:

- Geographically inaccessible areas with maximum tribal population-V4 areas.
- Areas where Institutional delivery has been reported less than 10 %.
- The coverage of the area should not be more than six GPs
- The NGO implementing the above project should prepare the micro plan with the involvement of ANMs at the Sub-centres. The micro plan has to be prepared in consultation with the service providers concerned & approved by the Chief District Medical Officer for implementation. DPM/ASHA Coordinator at the District level & BPM/MO, I/C at the Block level has to facilitate this activity.

## **Roles and Responsibilities of Staff and their Qualifications**

### **HW (F)-cum-Coordinator**

#### **(Contractual)**

- Supervise & coordinate the activities of home for smooth service delivery.
- Coordinate with hospitals & other agencies for ensuring essential services.
- Provide treatment under the supervision of the physician.
- Counsel mothers & her family members on various issues of Maternal & Child Health.
- Record keeping and maintenance from time to time.
- Consult with MO/ BPM at the time of any difficult situation occurred in **MAA GRUHA**.
- Follow up activities will be extended those who discharged without delivery.

#### **Qualification**

- Passed HSC examination
- Undergo 1year 6 months training for MHW(F)

### **Lady Health Asst**

#### **(Contractual)**

- Counsel mothers & her family members on various issues of Maternal & Child Health.
- Serve inmates as per need
- Assist HW (F)-cum-Coordinator in taking up assignments.
- Willing to work on rotation & at night shift.

- Consult with MO/ BPM at the time of any difficult situation occurred in **MAA GRUHA**.
- Follow up activities will be extended those who discharged without delivery.

#### **Qualification**

- +2 from any stream

#### **Cook-cum-Attendant**

##### **(Contractual)**

- Cook food for inmates
- Responsible for housekeeping & maintenance of cleanliness in the home

#### **Qualification**

- 7<sup>th</sup> Std.

#### **Monitoring, Report & return**

- Officers from DFW, consultants from NRHM, NGO cell, RRC at state level, the CDMO, ADMO (FW), DPM, DAM DHIO, DyMEIO at district level, MO (I/c), & BPO at block level will monitor the implementation of the project.
- Case card, attendance register for inmates and other book of accounts are to be maintained by the implementing agency. Photo documents of important events must be kept for record. Quarterly report in desired format is to be submitted to Block Medical Officer and CDMO and monthly report to Mission Director through CDMO.

#### **Strengths of the MAA Gruha Scheme**

##### **The analysis of the Maa Gruha projects as PPP identified the following results.**

- Wherever the NGO has been in the area for long time and has been undertaking numerous programmes, the Maa Gruha Centre was working well. The credibility of the NGO was an asset.
- The Maa Gruha Center was working well when the NGO coordinator was having excellent coordination with the local health authorities which was crucial for a PPP
- Most of the waiting rooms for tribal pregnant women in the center were having good facilities with fully equipped with beds, TV, IEC material and pamphlets and other facilities. Many centres even had beautiful garden.

- The food provided to the women and their escort was quite appreciated by all beneficiaries.
- The Institutional delivery rates have improved after the introduction of Maa Gruha Scheme.

### **Weaknesses**

- 1) The staff attrition rate was quite high in most of the centres.
- 2) The Maa Gruha Centre had good infrastructure but the surroundings like kitchen and toilets were not well maintained in few centres.
- 3) Many centres were not near the hospital and shifting them during night time was a challenge.
- 4) The outreach activities were not up to the mark for almost all the centres. Except for few camps and counselling sessions, patients were not really mobilized to the Maa Gruha Centre.

### **Challenges:**

- 1) The doctor was not visiting Maa Gruha Centre as his incentive was cancelled in the last year budget.
- 2) The field staff was not happy to go to field as they were not provided travel allowance. There was security issues when the staff had to venture in the field
- 3) Male escorts were there with pregnant women which was an inconvenience for the NGO and the co patients.

### **Performance Rating**

The Maa Gruha Centres were rated on a grade scale of 1 to 5 on 6 factors viz Infrastructure, Services Provided, Outreach services including Leadership and Community Support, Human Resources Trained and Retention, Records Maintenance and Funds Utilization. An overall score was calculated by getting the average of the scores.

The following table provides the ratings of the ten PPP Maa Gruha centres based on the above criteria.

Indicators	Kandhamal district			Raygada district			Gajapati district			
	Shanti Maitree	Farrel	Amagam	Alisha	Asha	Madani	Surak shaa	Peace	Ord Koin Pur	Ord R Udaya giri
Services Provided	4	3	4	4	4	2	3	3	2	3
Facilities / Infrastructure	4	3	3	4.5	1	1	3	3	1	2
Human Resources - Trained and Retention	3	4	3	3	3	3	2	3	3	3
Outreach Services, Leadership and Community Support	3	2	3	3	3	1	2	2	1	1
Records Maintenance	4	2	4	4	2	2	3	1	2	2
Funds Utilization	3	4	4	4.5	4	2	4	3	2	2
<b>Total Performance Score (out of Five)</b>	<b>3.5</b>	<b>3</b>	<b>3.5</b>	<b>3.83</b>	<b>2.83</b>	<b>1.83</b>	<b>2.83</b>	<b>2.5</b>	<b>1.83</b>	<b>2.17</b>

As per the above methodology, seven NGOs get good to average scores (2.5 out of five and above). Three NGOs scored less than 2.5 out of five which denotes poor performance in all accounts. Hence we recommend that only NGOs with scores above 2.5 and above are allowed to continue to run the PPP Maa Gruha Centre with the condition that they adhere to the key recommendations cited below and monitored by the health authorities at districts and NHM at State level.

### Key Recommendations

1. The main purpose of having an NGO do the MAA Gruha Scheme is because its advantage of providing outreach services likes camps, counselling tribal women in field etc so that all beneficiaries can come to the Maa Gruha Centre. The outreach activities should be compulsory for all NGOs
2. The travel budget for field staff has to be considered as it's an incentive to the field staff.
3. The honorarium for doctor could be revived so that they come to the Maa Gruha centre regularly for checkups and also in emergency.

4. The patients also could be given travel amount for being shifted to the hospital from the Maa Gruha Centre.
5. There is a need to provide incentives so that NGOs could also do innovations at the Maa Gruha centre over what is being done already as part of the scheme.
6. The record maintenance should be meticulous especially for food register where a huge amount of money is being provided. A register for daily expenses could also be made available.
7. The surroundings of the centre have to be good which includes the kitchen, cleaning area and toilet facilities.
8. The Maa Gruha Centre could also be ideally near the hospital where they are referred so that the hassle of shifting patients becomes easier. The NGOs also should take steps in making the steps from the centre to road patient friendly to avoid any risk.
9. It's important to retain the Human Resources for a longer period of time.
10. There should be constant monitoring of activities by the district and state level. There could be financial audit of expenditure especially the food expenditure incurred.
11. The NGO should effectively generate additional funds since its running other programmes in the same area.
12. More innovative schemes could be targeted towards the tribal belts in the Maa Gruha area as the NGO has a definite advantage to motivate and educate these groups. Such efforts could be provided incentives too.
13. Maa gruha centres were a boon to tribal women but a major obstacle was that many such centres were away from the health facilities. The average number of pregnant women who stayed in the Maa Gruha centre was about 25. They stayed an average of ten days in this facility before they moved to the health facility for delivery. The overall institutional delivery rates in the tribal area increased due to this scheme. PHCs managed by NGOs have also shown mixed results. Many have shown considerable and significant improvements but a few were not able to perform any better than the time it was under the Government. The significant improvement was in terms of the average OPD which was around 30 per day and IPD of about 10 per month due to availability of all manpower in the PHC. It was noted that in one remotest tribal PHC in Malkangiri, the average OPD per day was around 120 which was remarkable. The institutional deliveries were around 10 in the good performing PHCs. Earlier when the PHCs were run by government, Institutional deliveries were not happening. In few PHCs, the main obstacles included lack of medical officer, lack of outreach activities from the NGO and in few places, misuse of funds. However the NGOs through these PPP models, improved the accessibility to

health services in difficult to reach populations in the tribal areas of Odisha and brought forth the inadequacy of the public health delivery system.

### **Running PHCs through NGOs as PPP**

It's been always a challenge for the Government to retain Health staff in rural areas especially in Primary Health Care Centres. Ever since NRHM has been initiated in 2005, the Government has been open to handing over poor performing PHCs to NGOs. The NRHM provides guidelines for PPP in different National Health Programmes. Under RCH II several initiatives are being proposed to strengthen contracting-in, contracting-out and social franchising initiatives. During the last few years, the centre as well as the State Government has initiated wide variety of PPP arrangements. Department of Health & Family Welfare, Government of Odisha has also played a pioneering role in handing over the management of PHCs (N) to NGOs and Corporate Sectors. This initiative provided an opportunity to leverage the ideas, resources, and expertise of different partners in strengthening health care services for the people of Odisha with PPP as an innovative programme. The NGO operates the primary health centres (N) but the Government provides the building and all of its equipments, furniture, and supplies. It also pays staff salaries and medicines annually as per Government norm. The NGO receives the facilities and uses its own funds for whatever else is needed, including renovation, equipment, furniture, and beds. The NGO hires all staff, provides training as needed, and handles procurement. The primary health centre is open 24 X 7 hours. All staff members live nearby and are on call 24 hours a day. The centre offers the same primary health care services as government-operated centres, specializing in RHC and outreach. It handles normal deliveries and sterilizations. The government originally provides 95 percent of the costs, but the NGO is requested to provide at least 5% of the total budget. The budget for untied fund, annual maintenance grants etc. is also placed to respective RKS/NGO of the PHC (N).

### **Salient Results**

It was clear that the Ayush doctor, Lab technician and the attender ran the PHCs in most of the PPP models. The Ayush doctor was working mostly in the area before and hence he was present full time. It was found that the staff attrition at these PHCs are very high. The interaction with patients outside the PHC revealed that most of the time the AYUSH doctors conduct the OPD and the Allopathic medical officer was mostly on leave. It was also felt by the team that more than the medical officers who only handled the OPD but the attenders had a big role in the running of the PHC as he coordinated all the activities of the PHC due to his local connection. All issues relating to any law and order were handed by them.

## **Infrastructure**

PHC buildings were designated government building and NGOs had renovated them. The condition of the building and surroundings was fair with flooring and plaster on the wall intact. Few PHCs had no proper toilet facility. Few PHCs had electricity problem in the area because of which they couldn't store drugs which need cold chain equipment for storage. Most of the PHCs had all adequate equipments available like BP apparatus, Examination table Weighing machine, Thermometer etc but no Stretcher, Wheel chair, Sterilization equipment etc. The malaria tests were done at Pathology Lab.

## **OPD**

The OPD clinic patient footfalls were quite satisfactory at an average of about 30 patients per day in all the PHCs visited. In few PHCs on weekends the OPD was about 120. Patients are checked and treated for all kinds of fever, Malaria, Diarrhea, Respiratory Infections etc. There is also an AYUSH OP in few PHCs. Diagnostic facility were available at few PHCs. A full time lab technician coordinated the lab testing. The major tests being done are only the blood and malaria tests. On an average 50-60 malaria tests were done per month at the PHC. The diagnostic facilities although providing only basic tests are quite satisfactory in the PHC and there were not many shortages in chemical reagents. The Rogi Kalyan Samithi (RKS) was functioning in the PHCs ever since it started operations. The RKS members meet quarterly at the PHC. The RKS register and RKS audit reports were maintained properly. There were written minutes of all the RKS meetings. An amount of Rs 50000 is received as the NRHM contribution.

## **Outreach Services**

The outreach services of the PHCs were far from satisfactory. There were very few health camps done in the last few years. The camps provided free health check up and provided free medicines. The registers of the camps had the details of the patients who attended the camps and the diagnosis and medicines given. There was no proper IEC campaign from the PHCs to the rural and tribal poor. It was felt by the evaluation team that the efforts on IEC and BCC by PHC were far from satisfactory.

## **Register maintenance**

It was found that the OPD register, Referral register, RKS Register, RCH Camps etc were maintained by the PHCs. There was no register for IEC/BCC.

## Monitoring and Reporting Mechanism

In order to make the monitor and evaluate the PHC activities, regular review meetings are held on a quarterly, half-yearly and yearly basis. The review meetings are undertaken directly under the supervision of CHC (I/C) & CDMOs. Other personnel who were involved in these review meetings are the DPMs (District program Manager). The Medical officers of CHCs undertake the direct monitoring of the PHC. Usually there is a monthly review meeting attended by the staff of the PHC at the CHC headquarters. In the review meetings the NGO presents its achievement vis-à-vis the targets given to it. The review committee is apprised of the implementation of the outreach and other activities conducted by the PHC. The NGO heads usually attend the review meetings at both the district and CHC level to discuss the various emerging issues and challenges in running the PHC programme as PPP. Internal meetings are also held on a bimonthly basis, to review progress of activities undertaken and to discuss problem areas.

## Financial Management

The audit reports of the NGOs were mostly available. Five percent of the contribution was by the NGO. On an average the government paid 10-12 lakhs to the NGOs each year. The NGOs also maintained

- a) Cash book
- b) Voucher/Voucher Register
- c) Ledger
- d) Salary register
- e) Stock Register

The funds from State NHM were transferred to District NHM and from there to the NGO accounts. There is a separate account for PHC.

## Interaction with Different Government Stakeholders

### District officials and MOs of CHCs

The government officials were happy with the NGOs mostly. They suggested that although the rationale for having NGOs in running PHCs was to have service delivery in remote rural, the NGOs did not conduct adequate outreach health programmes. The patients felt that compared to two years before when the PHC was run by Government with just one pharmacist, currently the PHCs are doing good work. The staff like Ayush doctors are available at the PHC all the time as they have quarters and although it's a naxal-affected area, the staff is dedicated and does service to the poor. However they said that the Medical Officers were not available

most of the time. However all raised the importance of the PHCs in this cut off area. The interaction with ANMs at Subcentres and Anganwadi workers, ASHAs etc revealed that although there were good coordination with the PHC staff in conducting the RCH Melas, VHND days etc, they were mostly referring patients to the CHC than to the PHC. The PHCs did not have control over the sub centers, which was under the Government, and in the absence of close coordination the outreach activities were being affected.

## **Strengths, Weaknesses Challenges and Performance Rating**

### **Strengths**

- 1) NGOs have the expertise and community support to operate the PHCs at the tribal areas where earlier the Government had difficulty to have adequate staff in the PHC.
- 2) The PHCs operated 24/7, as staff quarters were available for the staff adjacent to the PHCs itself.
- 3) The financial accounts of the PHC (N) were audited.
- 4) OPD rates were quite good

### **Weaknesses**

- 1) The PHCs mostly were being run without an allopathic MO. The AYUSH MO is providing treatment and medication to the patients.
- 2) There is no intuitional delivery being conducted in few of the PHCs
- 3) The outreach activities and IEC/BCC are quite poor
- 4) There is no proper electricity connection at the PHCs.
- 5) There was lack of coordination between PHC Staff and ANM and Anganwadi workers and ASHAs in conducting outreach activities.
- 5) Some of the records (especially outreach activities) were not maintained well.

### **Challenges**

- 1) The Sub Centres are with the Government and they report to the CHCs. Although the PHC has coordination with the Sub Centers, it is still a challenge to get the Sub Centres to do the activities as per the plans of the PHCs run by NGOs.
- 2) Being an extremely remote and cut off area, which is also Naxal affected, poverty and lack of exposure pose challenges for the healthcare functionaries. The need to educate people about benefits of institutional deliveries, need for immunization and need for family planning is very high.

- 3) Retention of a Permanent Medical officer and other staff like ANM was a challenge in these PHCs.

### **Performance Rating**

The NGOs were rated on a grade scale of 1 to 5 on 8 factors viz Services Provided (OPD, IPD, Medicine and Pathology), Outreach Coverage, Facilities and Hospital Infrastructure, Human Resources Trained and Retention, Innovations, Compliance and Reporting, Monitoring and Support, Funds Utilization and Resource Mobilization. An overall score was calculated by getting the average of the scores.

### **Conclusions**

NGOs have been running the PHCs at the tribal districts as PPP projects under NHM for the past few years. It has met most of the criteria and targets set by NHM. It also covers remote tribal areas as part of the PHC catchment area. The performance of the PHCs have been just satisfactory. The PPP model has not derived its benefits to the fullest here. This is mainly because of poor coordination with CHC and Sub Centre staff and also absence of essential staff at PHC. The Outreach activities also required considerable improvement especially in the remote Sub centre villages. However it is important to note that the local people found that the performance of the NGO was better than what it was prior to the PPP model when it was fully run by the Government.

### **Recommendations**

- 1) The PHC (N) requires full time staff and especially the Medical officer and ANM. This would help in increasing the OPD figures as well as Institutional delivery.
- 2) The Outreach Activities in far off sub centre should be improved. The staff needs to visit these sub centers more often. There is a need for coordination between PHC Staff and ANM and Anganwadi workers and ASHAs in conducting outreach activities.
- 3) There should be transport facility available between PHC and CHC
- 4) The PHC should share a good rapport with the district authorities and CHC staff which is an essential for a good PPP project.
- 5) The financial records like cashbook vouchers, bills etc being spent by the PHC (N) should also be made available at the PHC.
- 6) The PHC (N) being run by NGO should bring in more funds from outside sources through the RKS apart from the Government grant in aid and also focus on more innovations in the PHC area.

- 7) The Subcentres should be managed by the NGO so that the entire outreach activities could be controlled for better coordination by the PHC.
- 8) More innovative schemes could be targeted towards the Naxal/tribal belts in the PHC area as a NGO has a definite advantage to motivate and educate these groups. Such efforts could be provided incentives too.
- 9) The payment to the NGOs by the NHM Odisha should also be regular and timely so that all the activities are undertaken without any hurdles.

### **Overall Conclusions and Recommendations:**

The study clearly indicates that the PPP models in Tribal health in Odisha have shown considerable and significant improvements in the health status of the tribal populations but there is still a lot to be achieved. Overall MMR rates have come down in the tribal districts where these PPP programs have been introduced. However the District/State administration needs to carefully select capable NGOs who would genuinely indulge in innovations & outreach activities. This will eliminate the spurious and bring forth dedicated NGOs for the service of people through Public Private Partnerships in Health. It should be noted that PPP does not mean privatization of the health sector and such partnerships are not meant to be a substitution for lesser provisioning of Government resources nor an abdication of Government responsibility but as a tool for augmenting the public health system. It is not just the private partner that needs to be responsible & accountable for a successful PPP but the public partner also needs to fulfil its duties in a time bound fashion. Government should recognize the need to cut short the bureaucratic delays in funding and address the issues of the private partner as and when required. There has to be better performance indicators and monitoring and evaluation has to be strictly undertaken by the Government. It is only with the private partner taking over the day to day functioning of the schemes that Government gets an opportunity to evaluate and frame better policies. Such symbiotic partnerships which bank upon the assets and mask the deficiencies of the other partner have the potential to revolutionize the public healthcare delivery system in India.

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## Medical Practice and Law: Miscarriage of Justice

Dr. S.G. Kabra\*

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### Abstract:

*This paper highlights the practices of health laws and ethics in the current context. There are medical determinants and four legal determinants of negligence - 4 Ds. (1. Duty to care 2. Dereliction of duty 3. Damage 4. Direct correlation between deficiency and damage.) and all four Ds have to be taken into account if the negligence have to be proved. The paper shows the variation how the Supreme Court and Consumer courts varies when it comes to important judgements of Negligence.*

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### Introduction:

- A physician or a doctor practices bedside medicine and not Law.
- His acts when tested on the anvil of law has to be strictly contextual - case specific, context specific and situation specific.
- Inability to recreate and understand the real time case details leads to miscarriage of justice.

Consider in this context a recent case decided by the Rajasthan State Consumer Disputes Redressal Commission headed by a retired judge. Rs.45 lacs with 9% interest have been awarded against the treating hospital.

It was a neglected case of Hirschsprungs disease in a 14 yr. old child. It is a congenital condition present since birth. There is a terminal segment of the large intestine in which the ganglion cells that enable it to dilate when the intestinal contents - feces - arrives. The contents of the intestine move by peristaltic wave of contraction. As a proximal segment of the intestine contracts, to push forward its contents, the part distal to it actively dilates in response to receive. If the distal segment fails to dilate, it acts as a shut valve. Part of feces, unable to pass through this

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undilated contracted segment, stagnates. The water of the part of feces retained, is absorbed and it progressively becomes dry, solid and stony hard (fecoliths). As more and more stool stagnates the entire large intestine gets filled with putrefying fecal matter leading to progressive malabsorption and malnutrition. All the body organs and functions suffer.

This is what had occurred in the 14 yr. old child. Whole of the large intestine was packed with fecoliths. Because of the long neglect, the child was suffering from malnutrition, severe anemia, hypoproteinemia, thrombocytopenia and deranged liver and kidney functions. This was all on the records submitted to the Commission.

However, the Hon'ble judge on the basis of the 'evidence on record', essentially relying on the complainant's narration of the case, arrived at a finding that it was a simple case of '*constipation*' that could and should have been treated with '*enema*' for which '*Ayurvedic medicine provide the best treatment.*'

As regards the evidence of malnutrition, severe anemia, low platelet count and organ dysfunctions, the learned Hon'ble judge concluded that '*it is a very common condition in Indian females and should have been treated with Iron, Multivitamins and nutrient supplements.*' The evidence placed before the court that the patient needed and was given 20 blood and blood products, were not only unnecessary, according to the judge, but '*negligent*' as the complainant had alleged that the '*deterioration in the patients condition started after the first transfusion.*' There is no evidence on record that there was '*blood mismatch reaction*' after the first transfusion. Besides, the complainant, as per the record, consented in writing for the subsequent 19 transfusions of blood and blood components.

**Informed consent:** The law is that nothing can be done on the body of a person without an informed consent. Informed consent means when it is obtained after informing the patient of all aspects of the intended intervention in a language understandable by the consent giver (disclosure and patient autonomy).

In the above case (Hirschsprung's disease) besides taking written consent for all major interventions including 20 transfusions, 5 written consents were taken for continuation of the treatment. All these consents were written consents in the vernacular of the patient. The required information about the intervention were detailed and hand written. On the 5 treatment consents, the court's findings were - *what was the necessity of such written consents? The duty of the doctor was to treat the patient and not to 'protect' himself? There are words in the vernacular consent that a lay person can not understand. All these hand written consents, even though duly signed and witnessed, were a total farce (farzi).*

Are these findings of the learned judge about the informed consents not perverse findings? The entire judgment in this particular case was based on such findings.

Consider in this context the three dictums stated at the beginning.

### The first dictum

- **A physician or a doctor practices bedside medicine and not Law.** A physician practices medicine as per the medical norms. For each case there are diagnostic norm and therapeutic (treatment) norms. The norms are case specific, context specific and situation specific. Medical norms are not fixed. The diagnostic norm for Hirschsprung's disease is to take endoscopic multiple biopsies to identify the length of aganglionic segment of the colon by histopathological examination. The treatment norm is to resect the affected segment of the colon and join the end of the colon to distal anal canal. This was possible and should have been done at very early childhood, as advised by the treating doctors. Gross neglect of the child changed the situation. The child's condition at the time of presentation was such that this was not considered feasible. With this situation the treatment norm changed. The life threatening hematological and malnutrition induced derangements had to be treated first before the definitive major surgery could be undertaken. To treat the presenting severe anemia, protein deficiency, thrombocytopenia, malnutrition and low vitality, appropriate treatment as per the indicated medical norms was given.

### The second dictum:

- **A physician's acts when tested on the anvil of law has to be strictly contextual - case specific, context specific and situation specific.**

Obviously and understandably, the Commission that consists of lay persons, could not interpret, appreciate and recreate the case to understand it in its complexity. Yet, the Commission judged the case to be a case of simple constipation that should have been treated by enema. To arrogate itself the role of a super specialist, to say the least, was naive. The arrogance of ignorance led to miscarriage of justice. Had a licensed medical person exercised the same judgment in this critical case, he would have been prosecuted for gross negligence.

The Hon'ble Commission found the hospital guilty of negligence. The medical determinants of negligence are failure to follow diagnostic and therapeutic norms available and applicable in the context and situation of a particular case. The norms are not fixed cook book recipes.

The Commission's judgment does not state which particular medical norm was not followed in this specific case. The Commission postulated treating a case of complications of a neglected Hirschsprung disease with "*enema, iron, vitamins and protein supplements as best Ayurvedic treatment*" is a preposterous 'legal norm'. The legal fraternity should desist from practicing medicine and arrogating itself the mantle of superspecialist.

- **The third dictum: Inability to recreate and understand the real time case leads to miscarriage of justice.**

It is obvious that even with all the medical evidence placed before the lay Commission, it is very difficult, if not impossible, to recreate a medical case with all its situational and contextual complexities for the appreciation of the court. Let alone the complexities, even the basic medical nature of a case, e.g. *gaganglioniclarge bowel segment of Hurshchprung disease in present case*, is difficult to put across. The victim is the treating physician. The judge is not liable for its 'medical decision'. Physicians can not judge a judge for his medical decisions.

- **Negligence:** - Is defined as "The admission to do something which a reasonable man, guided by those ordinary consideration which ordinarily regulate human affairs, would do or the doing of something which awchich a reasonable and prudent man would not do." Medical negligence is professional negligence done by medical professional.
- **Medical determinants of negligence** - failure to follow diagnostic and therapeutic norms available and applicable in a particular case.

The onus to prove negligence is ordinarily of the complainant. In medical matters the onus is shifted to the physician, as the complainant doe not know what medically was done. The physician has to prove his innocence. For this, the treating physician, to apprise the court of details of the case (recreates the case), provides a case narration in chronological sequence. Diagnostic norms (examination and investigations) and therapeutic norms (Treatment given), in contextual sequence are provided (case specific, context specific and situation specific norms applicable, available and applied). This is substantiated with the patient record (bed head ticket).

Negligence is established by the opposite party by demonstrating which specific norm has not been followed or a wrong one has been applied.

- **Legal determinants of negligence** - 4 Ds. (1. Duty to care 2. Dereliction of duty 3. Damage 4. Direct correlation between deficiency and damage.)

**Duty to care** arises when a physician accepts a case - the acceptance may be express or implied and against payment or free). Usually not contested in consumer cases.

**Dereliction of duty or deficiency in service.** Failure to timely fulfill the medical needs of a patient by applying the diagnostic and therapeutic norms indicated. The level of care is per prudent person (physician) concept.

**Damage.** Physical, physiological or functional loss to the patient.

**Direct correlation between the deficiency alleged (norm not followed) and the damage. Proximity in the cause and effect.**

### **Conclusion**

**All the 4 Ds must be determined and established by the complainant for the negligence to be proved.**

According to the Supreme Court judgment all the four 'Ds' must be fulfilled for the negligence to be established. Consumer courts seldom do it. Lawyers do not insist.

Since the judgment in state level consumer courts is to be a summary trial it is free for all.

## Dexterity in Action: A 360-degree approach to offer quality care by customized services for reproductive-age women

Dr. Roopashree.M.Rangyyan, Dr. Shrikrishna Dhale, Ankit Singh\*

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### Abstract:

**Introduction:**With the distinction of Indian culture having a strong family background, the natural birthing process has been in vogue. With transdisciplinary approaches, preparation for the normal birthing phenomenon is effective for parenthood. By continuum of care with the quality of services during pre, intrapartum, post-partum phase counseling to new mothers provides better bonding and minimizes the adversity.

**Methods:**Descriptive study on the quality care with multimodality approaches for the normal process of birthing by sessions of yoga, Lamaze classes that include Diet, nutrition counseling, meditation sessions, physiotherapy, relaxation techniques.

**Results:**Providing care and comfort during the intrapartum phase for painless delivery is a strategy for better adaptability to new mothers. Incorporating best practices such as providing delayed cord clamping & implementing skin to skin touch of the newborn soon after the delivery to encourage bonding & prevention of hypothermia. Lactation counseling for exclusive breast-feeding till 6 months, the most intimate bonding experience between mother and infant.

**Discussion:**A combination of these therapies initiated from the pre-conceptual stage up to the intrapartum phase along with Dulia support for delivery and Post-partum stages supported with exclusive breastfeeding practices for women and kangaroo care for the baby are effective. The emotional care and support for women during reproductive age are provided by multi-modality techniques.

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***Application: The Best Yoga exercises for pregnant women which are provided as customized recommendations helps in the natural birthing phenomenon.***

***Conclusion: Incorporating yoga and multidimensional approaches has been an impacting factor for women during the reproductive phase.***

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## **Introduction:**

**“YogahKarmasuKausalam”** Yoga as special knowledge and life skill helps the body and mind to reach a state of calm and peace. As Sri Auribindo emphasized that Yoga practice helps in self-development and it can be customized to individuals for reaching the desired effect. The key aspect of Yoga is to culture the mind and physically be fit to attain the state of all-round development(1).

As Bhagavad Gita and our ancient literate Upanishads have mentioned the scope of yoga in a comprehensive manner. As Swami Vivekananda has explained that one's evolution into a single life there is growth and development in bodily existence.

Nearly 5000 years ago, Pathanjala Yoga which is best known as the sixth system of India Philosophy consists of Sutras (aphorisms) which are the principles of yoga. These have made immense contributions in the field of yoga(2).

The World Health Organization (WHO) has defined a state of health as a state of complete physical, mental, social and spiritual well-being and not merely an absence of disease or infirmity. Yoga helps to prevent disease, promote positive health, being in economics, pleasure, and joy, at the same time, in the framework of ethics. During the process of pregnancy which is systematic, accelerating of growth of a human being in his/her entity is achieved by all-round development. Yoga helps in nurturing and promoting positive health(3). Yoga can accomplish an all-round personality development by bringing bliss into one's life. According to renowned yoga guru B.K.S Iyengar “The rhythm of the body, the melody of the mind and the harmony of the soul create the symphony of life”.

During pregnancy and normal childbirth process, “The search begins; The Quest starts”. The journey of transformation begins. Call it as introspection, inward look, an awareness, and features of the quest. The subtler layer of the mind unfolds themselves - the inner dimensions of personality open out(4). By Yoga, a proportionate body with all the muscles relaxed is a normal state. All organs and systems in the bodywork in harmony and with the least abnormalities. It is very important that breathing practice and a few minutes of meditation can create calmness and bring sustainability in work life. To mention a comparison, the Yogic body is soft like a flower, supple to the core, instantaneously it can acquire a diamond hardness!

**Material and Methods:** From pre-conception stage till Normal delivery, for the benefit of women during the reproductive stage, PathanjaliYogasutrasa, Hatha yoga Pradipikaprovides an opportunity to inculcate mindfulness for better posture, gate which in turn helps in all-round growth and development by:

- Muscular level relaxation making the body feel lighter and smoothening
- Maintaining the state of the body in balance, slowing the breathing pattern and increasing the vital capacity at the Pranic level
- Improving the creative thinking capacity, stabilizing the mental level, increasing the efficiency by will power
- Optimizing the intelligence with calming down the mind to moderation
- Streamlining the mind at the emotional level to bring happiness
- Calmness and innate divine state in a different stage of life

Yoga leads to Svasthya, which means Peace, Satisfaction, Comfort, and Healthy.

The concept of the body according to yogic lore has been described in Taittreyaupanisat as 5 major sheets of existence which are systematically arranged.

- **AnnamayaKosa:** Based on our physical personality consist of five elements (PancaBuhutas) namely earth (Prthvi), Water (Jala or Apa), Fire (Agni or Tejas), Wind (Vayu) and Space (Akasa). This deals with food which we consume as nourishment. Balanced diet & Nutrition plays a major role in physical personality during the prenatal, perinatal and post-natal period.
- **PranamayaKosa:** The fundamental components in the universe is present inside and outside our body. To maintain a stable and harmonious flow of sole or the Prana helps to each cell keeps them alive and healthy.
- **ManomayaKosa:** Conglomeration of thoughts, mind (Manah) and memory (Citta). In ManomayaKosa, gathering the momentum of emotions (Bhavana) and governing our actions. Any imbalance is interpreted as Adhi it is stress-related factors. Long-standing stress or Adhi leads to systemic diseases or illness called Vyadhis
- **VijnamayaKosa:** Mind of the human race believes in performing things that are right as per logical thinking capacity which differentiates humans from animals. Doing things right is the judgemental capacity with the intellectual capacity of individuals.
- **AnandamayaKosa:** A state of complete silence and a blissfulness with the harmony of oneself and the surroundings. This state leads to perfect health and prosperity.

Pathanjali gives the whole dimension of Suthras or 196 aphorisms. Raja yoga is one of the main streams of yoga. Raja yoga has Astanga yoga - the eight limbs and advanced yoga. Astanga yoga is divided into two parts: Bahiranga Yoga and Antaranga yoga.

Bahiranga Yoga consists of Yama (Don't's), Niyama (Do's), Asana (Yogic postures), Pranayama (Mastery over mind through breathing), Pratyahara (Mastery over mind through senses).

Antharanga yoga consists of Dharana (Binding the mind on single thought), Dhyana (Effortless Focussing) and Samadhi (Merger).

**Results:** "Yoga" initially starts functioning in the physical level, which later state modifies to mind and body integration at a subtler level. The "Asana" are positions of firmness at ease. By practicing yogasana as day to day practices the positions are maintained for longer durations. The three stages of Yogasanna: Sthira, Cira, and Sukha transform an individual to be a better individual as a mother and for her family.

By Yoga and Natural birthing where women are prepared physically, mentally and emotionally for giving birth, by letting nature take its course in a un- medicalized way(5). This allows women to lead the birthing process naturally with utmost comfort. Choosing natural childbirth is trusting one's own body.

In Indian Philosophy: "We believe in women empowerment and women's rights. Women have to plan and make choices of the safe birthing process under the skilled care provider's sensitive observations and monitoring(6). Pregnancy and childbirth are a normal phenomenon and need minimal interventions unless it is assessed to be complicated one(7).

Medical services & Supportive care, for those who are to be mothers, are provided with comprehensive sessions of Lamaze sessions(8) that include Diet and nutrition counseling, Yoga and Meditation sessions, physiotherapy, relaxation techniques.

The main objectives are:

- To provide customized care to meet the reproductive needs of women with the consensus of their families.
- To provide birth preparedness to women through non-judgemental & complete information.
- To help simplify the birth process with an informed approach that helps to eliminate women's fear and manage pain.
- To enhance natural births without instrumentation.

- To give women, their family, and future baby the experience of blissful birthing.
- To provide a powerful voice for women using the services by acting as an advocate for them.

**Discussion:**By these training of Yoga and Lamaze, women incur training for birthing process through prenatal counseling& coaching using essential components of prenatal exercises, pelvic floor exercises performed regularly at frequent interventions scheduled under the supervision and assessed at subsequent intervals to tone and prepare the perineal muscles which will help in minimizing the risk of tear and ensure a smoother and more comfortable birthing process.

- To educate and train women with techniques to eliminate their anxiety during pregnancy and birthing through meditation and relaxations.
- To provide a comfortable and homely atmosphere.
- To offer gentle birthing and labor aids such as birthing balls and birthing seats.
- These also support the women in adopting a preferred position for birthing.
- The provision of complementary therapies to soothe the intensity of pain during birthing through "painless labor - epidural anesthesia" is in vogue at health care centers.

There are proved long term benefits that are regarded as a transdisciplinary approach for systemic illness to minimize the adversity and reduce the complications(9). There are short term advantages of inculcating yoga practices and meditation to improve the health and well-being during pregnancy and birthing process.

From the provider's point of view, the first step is to develop the prescription to address the personal goals of the patient. Ideally, there will be multiple goals that are to be achieved:

- Weight loss before conception or normalization of weight to ideal weight.
- Increase the strength and endurance
- Reduce cardiovascular risks
- Improve blood glucose control



**Fig.1. Steps involved in the process of customized care for the patient.**

As there are specific steps involved in prescribing these exercises, a plan for customization is considered for implementation(10).

Plant to increase intensity or duration of activity over time:  
Practical consideration



**Fig.2. Steps involved in the Prescribing Exercises.**

By providing multimodality as packages for the targeted patients, the outcomes are reached in a 360-degree manner.

Lamaze sessions are planned interventions taken up voluntarily for the pregnant women on the 5th month of pregnancy. Every week, planned sessions on the posture, gate, physiotherapy exercises regarding strengthening the pelvic floor muscles are

considered(11). A combination of hands-on activities along with the demonstration of parenting skills is incorporated. There are sessions for mothers to be performed individually and also for the couples to perform in pairs.

Prenatal counseling & coaching with the techniques and skills for developing them flawlessly are provided as myths and benefits, dos and don'ts and as interactions(12). Every parent has to be provided with an awareness of the techniques of parenthood.

Duala support has been in vogue in the west for many years. The experienced and well-informed ladies who take initiatives in the normal birth process are boon for young mothers to be(13). There are many instances of nuclear families are heading towards single precious child norms and Duala support has been well adapted in many birthing centers which are mushrooming for spreading the essence of normal delivery. As a support system, a well experienced Duala is far better than inexperienced family members and bystanders.

The best practices that are incorporated during and post-delivery are:

- Providing delayed cord clamping(14) & immediate skin to skin touch of the newborn soon after the birth helps in emotional bonding and also prevents the untoward consequences of hypothermia.
- Lactation counseling for exclusive breast-feeding till 6 months, the most intimate bonding experience between mother and infant(15).

The Best Yoga exercises for pregnant women which are provided as recommendations:

SL. No.	Pose / posture	Asana
1.	Butterfly pose	Baddhakonasana
2.	Hero pose	Virasana
3.	Easy pose	Sukhasana
4.	Cat pose	Marjaryasana
5.	Tree pose	Vrikshasana
6.	Worrier pose	Virabhadrasana
7.	Low lunge pose	Anjeneyasana
8.	Godess pose	utkatakonasana
9.	Full squat pose	malasana
10.	Standing Mountain	Tadasana
11.	Lord of dance	Natarajasana
12.	Upword bow pose	Chakrasana
13.	Camel posture	Ustrasana

Post-delivery exclusive breastfeeding, frequent nursing about 10 to 12 times a day with the time duration of 90 minutes to 120 minutes helps for the growth and development of the baby. The aim of exclusive breastfeeding is mentioned by WHO as a recommendation. For years, WHO, La Leche League international along with BPNI (Breastfeeding promotion Net-work of India) has brought in a sea of changes in the frequency, duration and nursing pattern. The role of a well-experienced breastfeeding counselor is of utmost importance in situations of fussy babies who are reluctant in accepting the feeds.

During these phases, incorporating lifestyle modifications plays a vital role in the betterment of the health of individuals and also the new-born.

**Conclusion:** By providing appropriate care and support, the majority of women prefer to achieve the normal birthing process. Even during the difficult stages of delivery, with minimal technical interventions, pregnancy outcomes can be better for those women who practice yoga.

As yoga practice is proved beyond doubt to enhance the outcomes of physical and psychological well-being. There are instances of a reduction in the body mass index post-delivery and also minimizes the stress and anxiety at the post-partum phase. In totality, the general well-being improves by a combination of Lamaze and aerobic exercises. As multi-modalities of interventions like counseling prepares the couple for better adaptability to maintain the stability of parenthood.

We have to train our younger generation regarding these aspects with scientific knowledge and develop skills of support and care in a structured manner. Courses at the Institute with the hands-on training and development perspective have to incorporate distinctive areas of the blend of academic, cultural and psychological aspects to the students in transdisciplinary medicine. These institutes will be a boon for building around development in developing insight into the growth and development of the students and aspirants for venturing to these courses.

Right from the time of induction of these courses, the culture of the organization has to be a student perspective approach for the betterment.

Academic perspective: The distinction of academic input is books along with the magazines providing recent trends and innovation aspects information. There is the availability of e-learning books which is provided in abundance. There are top branded learning materials for updating and nurturing knowledge. Many of the technical talks are structured with a blend are transdisciplinary approaches. By listening to renowned speakers as guest faculty providing their concepts that are transforming in nature. To learn through hands-on experience, we have simulation-based training modules incorporated in every aspect. All adult training modalities are incorporated for making it innovative and as emerging trends.

Cultural Perspective: We need to provide multidimensional inputs and practices for the inculcation of our own cultures along with national and regional level cultural practices. As these are imbibed in the concepts based, the students find this diversity as a unique blend of culture more adaptable. Cross-cultural approaches play a distinctive impact on the knowledge, attitude, and practices in imbibing these techniques.

Psychological Perspective: As these students are in their late teens and early 20s, by providing an opportunity and psychological supports in terms of mentor and mentee relationship, molding these students from all adversities.

By considering a blend of three perspectives we can achieve teaching-learning aspects in a structured manner.

All these learnings are based on the trust and confidence of the students with their interests and involvement. Most of these practices are cultural adaptability and best practices incorporated in many organizations. These are continual learning opportunities to the faculty and also to the students. Ethics and trustworthiness from all these three perspectives are to be enrooted deeply within the system.

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## Health Status in Odisha: An Analysis of Achievements and Challenges Under National Health Mission

Dr Meka Sivapriya\*

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### Abstract:

*Health is an essential input for development of human resources and quality of life and in turn the social and economic development of nation. National Rural health mission was launched on 17<sup>th</sup> June 2005 in Odisha. It seeks to provide quality healthcare to the rural population, especially the vulnerable groups. The main components of NRHM in Odisha included Reproductive child health (RCH), Immunisation, National disease control programme. The activities undertaken under NRHM in Odisha are: Accredited social health activist (ASHA), Mainstreaming of AYUSH, United funds to subcentres, Formation of Rogi kalyan samities, Mobile medical unit. The objective of the study is to look at the achievements, innovations and challenges of Odisha state under the implementation of National health mission and provides recommendations for improvement. The study was mainly based on secondary data. The study reviewed the major activities of different schemes under NHM and assessed the progress and also responses from key stakeholders in NHM Odisha to understand the innovations and challenges under NHM. There are various schemes which are run by the state and NHM like Mamata, BKKY, BSKY, Ama clinic, Maa gruha etc. The budget allotted for healthcare in 2007-08 was 3.3%. After a decade in 2017-18 it was 4.9%. For 2018-19 Odisha has allotted 5.1% of total expenditure on health, which is higher than the average expenditure of 18 other states (4.8%). The analysis of NHM budget showed that overall budget for NHM Odisha increased substantially from 2007-08 to 2018-19. The newer innovations include management of PHC's by NGO's, post training supervision and monitoring of IMNCI-trained personnel by NGO, community monitoring, application of GIS technology etc. The geographical coverage is a blot on health care in Odisha due to regional disparities. The human resources management with acute staff shortages in numerous districts, unsatisfactory promotion avenues, low morale, and high absenteeism were major obstacles.*

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*There is still lot of progress required in modernising health services, reducing out of pocket expenditure. It can be concluded that Health care in Odisha is in transition .The state is investing in health technology to promote scientific evidence based scientific decision making and promotes efficiency, enforcement of standard treatment guidelines and referral protocols to ensure quality of healthcare.*

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### **Introduction:**

At every stage of life, health is determined by complex interactions between social and economic factors, the environment and individual behaviour. A healthy population can contribute to economic growth and development of a country. India has made considerable progress in many health indicators. There is increased life expectancy at birth, great reduction in IMR and crude death rates.

The primary objective of any health system is to provide quality healthcare services to its people. This reformation started in Odisha from 1990's and state efforts to improve the health status of its citizens have had success, but there is still much progress to be made. The state has been proactive in reducing the MMR, IMR rates and improving Institutional deliveries.

The health of people in any state is determined by two key factors: i) the conditions in which people live and ii) the health care that the people get. Particularly in the context of Odisha, this is one such state in India which is stained with poor socioeconomic status of the inhabitants. Lower income, poor housing facility, lack of education and discrimination are some of the factors that contribute to the poor living standard including poor health status of the people in the state. Before commencement of national rural health mission in the year 2005, the important health indicators like IMR, MMR and Institutional Deliveries have been 75(per 1000 live births), 303(per 100000 live births) and 35.6% (of total deliveries) respectively.

To improve access of rural people especially poor-women and children to equitable, affordable, accountable and effective primary healthcare NATIONAL RURAL HEALTHMISSION has been in operation since June 2005 in Odisha. It aims at effective integration of health concerns with determinants of health like sanitation & hygiene, nutrition and saving drinking water through a district plan for health. The main components of NRHM are Reproductive child health (RCH), Immunisation, national disease control programme. The main activities under NRHM are ASHA, mainstreaming of Ayush, untied funds to subcenters, formation of Rogi kalyan samities, mobile medical units, strengthening of PHC/CHC/UGPHC. In the last few years ODISHA has improved its health status with the advent of the national schemes.

### **Objective of The Study:**

To look at the achievements, innovations and challenges of ODISHA state under the implementation of National health mission and provide recommendations for improvement.

### **Methodology:**

The study was mainly based on secondary data. The study reviewed the literature and also major activities of the different schemes under NHM and assessed the progress. Detailed analysis of the Program Implementation Plans was also done with special emphasis on the budget allocations of the state under the various schemes. The review of various evaluation reports undertaken by third party agencies in Odisha for the various schemes was also done.

### **Findings of The Study:**

Government of Odisha has been committed to improve the health status and quality of life of its people, by focussing on health issues with the objective of reducing disease burden, creating an enabling environment, influencing health determinants. To achieve these goals the state government with support of Ministry of health and family welfare and National health mission introduced various schemes and programmes. The study looked into the various health schemes undertaken by the Odisha health Department under National Health Mission and the activities carried through it.

A few among them are the following.

#### **Mamata Scheme:**

Government of Odisha has launched MAMATA SCHEME in September 2011. It is a conditional cash transfer scheme, which provides monetary support to pregnant and lactating women and enables the working women to take adequate rest during their pregnancy and delivery.

According to the guidelines of scheme beneficiary women can receive Rs.5000 in two instalments. Scheme is operational in 318 rural projects of the state and for women of 19 years of age and above for first two births. The Odisha govt. has reached more than 38.89 lakh pregnant and lactating women through this scheme by disbursing more than Rs.1810.76 to the bank accounts of the beneficiaries through Direct Benefit Transfer (DBT). The government also extended the benefits of the scheme to particularly vulnerable tribal groups (PVTG) in the state where it covers all the live births up to 2024.20. According to economic survey of Odisha for 2018-19 around 4.99 lakh pregnant women and 1.34 lakh sick children got benefitted.

**Figure 1**

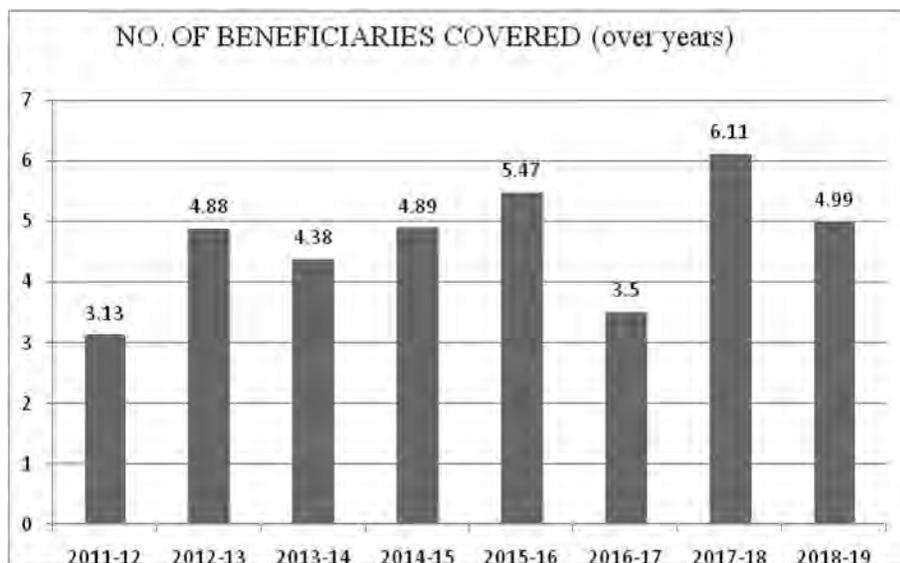


Fig-1 indicates the number of beneficiaries covered under Mamata scheme from 2011-2019 in Odisha. There is around 60% increase in beneficiaries covered.

**Figure 2**

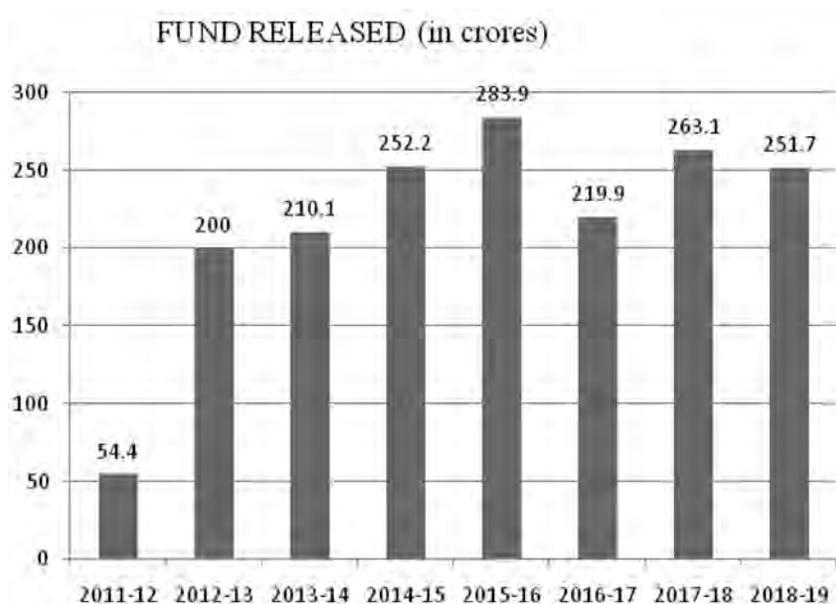


Figure-2 shows the fund released (in crores) by Government of Odisha under the scheme which increased around 300% from 2011-2019.

**Figure 3**

**MMR IN ODISHA COMPARED WITH INDIA  
OVER YEARS (per 1lakh births)**

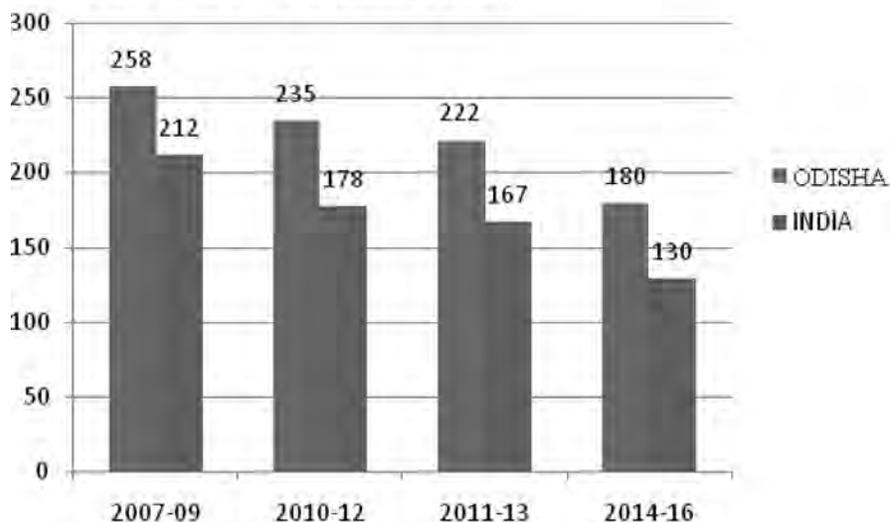


Figure-3 indicates the significant decrease in MMR in Odisha along with national average.

**MAA Gruha:**

To facilitate friendly health services to pregnant women in tribal , remote and inaccessible areas NHM and DEPT. OF HEALTH AND FAMILY WELFARE has setup MAA GRUHA'S or MATERNITY WAITING HOME'S. Geographical barrier and lack of communication hinders transportation of expectant mothers to hospital in the last stage of labor or in emergency and these problems can be approached through MWHs.

It is a temporary home for expectant mothers where they can wait for safe delivery preferably 7-10 days before expected delivery data. It provides accommodation and recreational facilities, provision of food for expectant mother and her escort (one). Based on operational guidelines of Maa Gruha from NRHM Odisha, 6 pregnant mothers at any point of time and average 20 cases per month are taken and post-partum cases are not allowed to stay at this home. Till 2018-19, 81 MWHs got operationalized through which 52,811 pregnant women are benefitted.

Figure 4

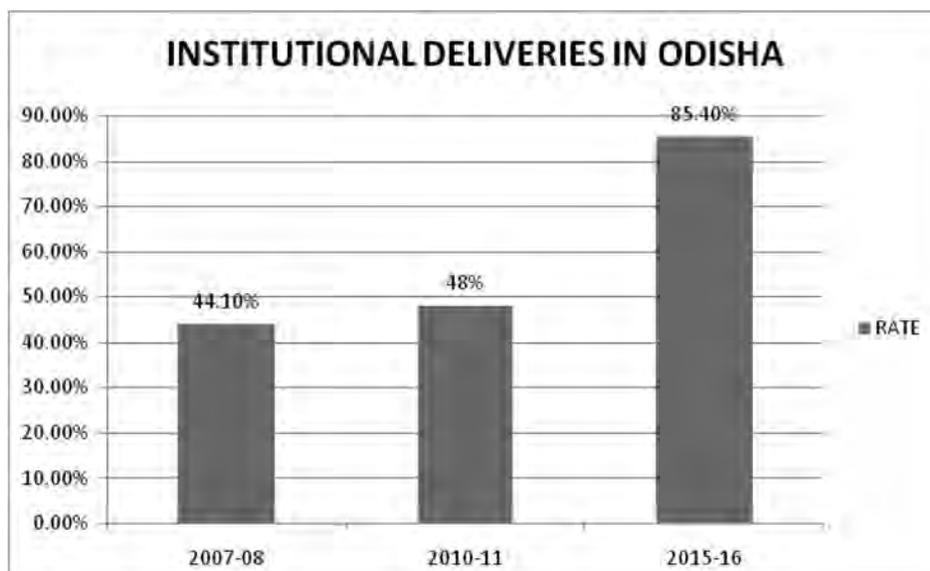


Figure-4 implies significant increase of Institutional deliveries in Odisha around 90% over a decade.

### **Biju Krushak Kalyan Yojana (BKKY):**

Odisha has 83% of its population living in rural areas and farming is their backbone. The major cause of farmers falling to poverty trap is the financial hazards and deprivation that health related expenses bring to them. So the govt. of Odisha has launched BKKY in November 2013.

Guidelines: Farmer families should be enrolled under BKKY. Family size must be limited up to 5 members. Enrolment of beneficiaries for every 3 years and auto renewal of smart cards every year.

### **Finance:**

State Government is financing the scheme completely. Beneficiary pays Rs.30 per annum registration fee once in 3 years. Refund clause of 80% as claim against the total premium point to the insurance companies. Benefits of this scheme are provided in two streams.

### **BKKY-1**

For the enrolled families up to Rs.30, 000 per family per year is provided for coverage of meeting expenses of hospitalization for medical/surgical procedures (maternity benefit or new born) in any of the empanelled healthcare providers

across the state listed under RSBY. Total reimbursement of Rs.30,000 can be availed individually or collectively by enrolled families per year. On a floater basis, expenses up to 70,000 per family per year (subject to limits) can be recovered by enrolled families. Those families enrolled under RSBY are not eligible for coverage under BKKY stream-1.

### **BKKY-2**

Coverage for meeting expenses for medical/surgical procedures up to 70,000 per family per year on a floater basis, subject to limits, in any of the empanelled critical care provides across Odisha and outside, for specific procedures. All the RSBY eligible beneficiary families are eligible for coverage under BKKY-2.

According to the final evaluation report of National productivity council for 2016-17, around 57, 64,359 farm families have been enrolled and an expenditure of Rs.20.97 lakh has been incurred (till Jan 2017). During 2017-18, it is projected to support all farmer families in the state under health insurance cover free of cost with proposed cost Rs.8811lakh. This also covers health insurance up to Rs.1 lakh to the fisherman families covering five members in a family.

### **AMA Clinic:**

Ama clinic was launched by Government of Odisha on January 1st 2018 which provides fixed day specialist services (on a designated day of a week) at urban PHCs. main aim is conducting screening of critical illness and medicines, decongestion of caseload at district/city hospitals, provision for more inclusive choice of drugs.

**Table 1**

<b>DAY</b>	<b>SPECIALIST SERVICES</b>
<b>MONDAY</b>	O&G
<b>TUESDAY</b>	NUTRITIONISTPHYSIOTHERAPY
<b>WEDNESDAY</b>	PEDIATRIC
<b>THURSDAY</b>	MEDICINE/GERIATRIC PHYSIOTHERAPIST
<b>FRIDAY</b>	SKIN-VD/DENTAL/EYE/ENT
<b>SATURDAY</b>	PSYCHIATRICADOLESCENT COUNSELLING

Table-1 signifies the specialist doctors available in Ama clinic during from Monday to Saturday.

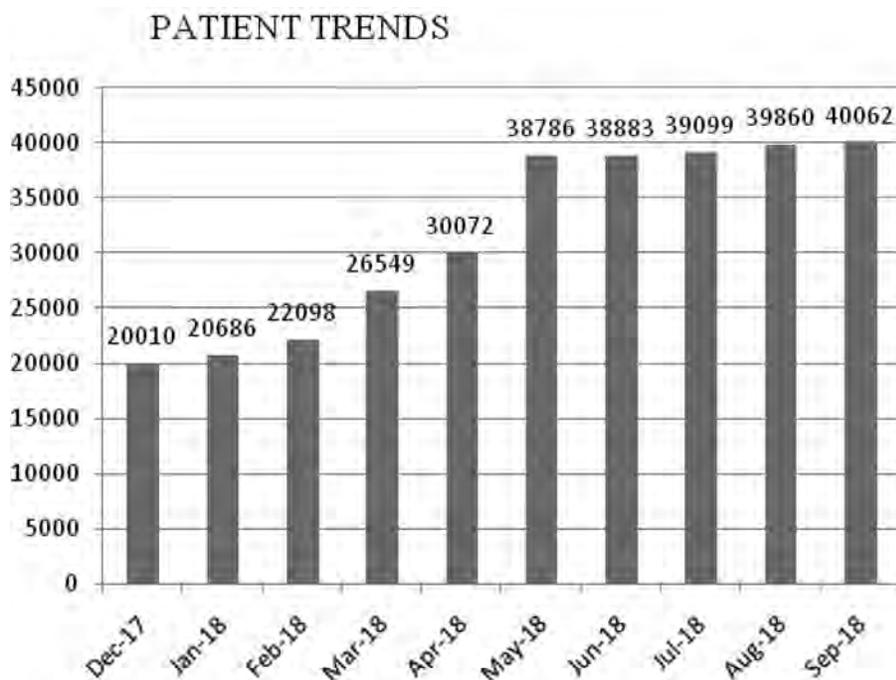


Figure-5 indicates the patient flow or number of people who utilised services provided through Ama clinic from December 2017 to September 2018 in Odisha.

The state government brought awareness of the scheme by using electronic and print media, hoardings, branding of health facility, sensitization of ward kalyan samiti, mas, Ashas, and sms alerts to the patient. All of these include indirect financial implications of the scheme.

The direct financial implications are Rs.1250 per session (3 hours) and two sessions per day. No cost towards specialist from DHH/medical colleges. Monthly payment to the specialist (as per claim sheet) through DBT Since there is increased awareness of community on Ama clinic, there is increased patient flow and also reduction in out of pocket expenditure. 73 UPHCs (out of 87) of Odisha are providing specialist services under Ama clinic.

### **Biju Swasthya Kalyan Yojana:**

Biju Swasthya Kalyan Yojana aims to provide universal health coverage, with special emphasis on the health protection of economically vulnerable families in Odisha. BSKY has two components: A. Free health services for all (irrespective of income, status or residence) in all State Government health care facilities B. Free healthcare

services beyond District Headquarters hospital level, for over 70 lakh economically vulnerable families in the State, who are provided Annual Health coverage of Rs.5 lakh per family and Rs 7 lakh for the women members of the family.

Benefits under Biju Swasthya Kalyan Yojana stated by National health mission are: All health services are free of cost, including free drugs, free diagnostics, free dialysis, free Cancer chemotherapy, free OT, free I.C.U, free in-patient admission etc. in all government health institutions up to District Head Quarters Hospital level, for all persons. Families having BKKY card, RSBY card, BPL card, or AAY card or annual income of Rs 50,000/- in rural and Rs. 60,000/- in urban areas can avail cashless treatment at all Government Hospitals and 208 empanelled Private Hospitals.

Apart from these schemes, the main activities under NRHM initiatives are:

ASHAs- more than 45000 ASHAs are the most visible faces at the community level in the state.

GAON KALYAN SAMITI (GKS) - the village health and sanitation committee in Odisha have demonstrated unique ability to drive the local health agenda. They support the process of decentralized health planning in the state. There are around 45000 GKS in the state provided with annual untied fund of Rs.10000/- to take up local level action plan.

AYUSH- Directorate of AYUSH was created in June 1968 to lay emphasis on improving health care facilities, upgrading AYUSH educational standards and awareness. There are around 800 Ayurvedic clinics and 5 Ayurvedic hospitals functioning in the state. New AYUSH hospital with 300 beds will come up in Dhenkanal district.

ROGI KALYAN SAMITIES: development of a proper management structure which is called as rogi kalyan samiti as in other states which has high feasibility and is being replicated in Odisha. In the state around 90% of institutions have been registered and fund utilization has started. District divided into five zones and key members have been sensitized, who in turn shall orient & sensitize the RKS functionaries.

MOBILE MEDICAL UNITS (MMUs): is a key strategy to facilitate access to public health care particularly to people living in remote, difficult, under served and unreached areas. Odisha has accounted for 7.82% of total 1458 MMUs functioning in India. As per 31st March 2014, 114 MMUs are available in the state. With an aim to provide doorstep healthcare facilities in rural Odisha, union minister Dharmendra Pradhan flagged off 11 new MMUs in state, in which 6 are sponsored by Hindustan petroleum ltd, 4 by Gail India ltd and by ONGC as a part of their CSR funds.

**STRENGTHENING OF PHC/CHC/UPHC:**As a part of PPP reforms in Odisha 34 PHCs are being managed by NGO collaboration for providing services in remote and difficult areas out of 40. These PHCs have registered remarkable improvement in terms of OPD, IPD, Institutional delivery and laboratory tests since taken over by NGOs. Badimunda Primary Health Centre (PHC) has set a benchmark in innovative management of OPD patients. The hospital has become a preferred destination for patients of nearly 30-odd villages of Loisinga block. The health centre provides no lesser service than any private hospital. The PHC, which has one MBBS and one Ayush doctors along with a pharmacist, staff nurse and attendant, has created a record by treating 1,23,099 patients in the last couple of years. This PHC has achieved Kayakalpa award twice in 2017-18 and 2018-19 by the state health department.

### **Budget Analysis:**

The budget allotted for healthcare in 2007-08 was 3.3%. After a decade in 2017-18 it was 4.9%. For 2018-19 ODISHA has allotted 5.1% of total expenditure on health, which is higher than the average expenditure of 18 other states (4.8%). The following table highlights the increased allocation of budget to Odisha under NHM.

**Table 2**

<b>YEAR</b>	<b>TOTAL NHM BUDGET (RS. IN CRORE)</b>
2007-2009	509.727
2010-2011	735.63
2013-2014	981.71
2015-2016	1043.79
2016-2017	1361.03
2017-2018	1643.29
2018-2019	1796.88

Table-2 illustrates the budget allocation under National Health Mission of Odisha from 2007-2009 which was 509.727 crores to 1796.88 crores in 2018-19.

Figure 6

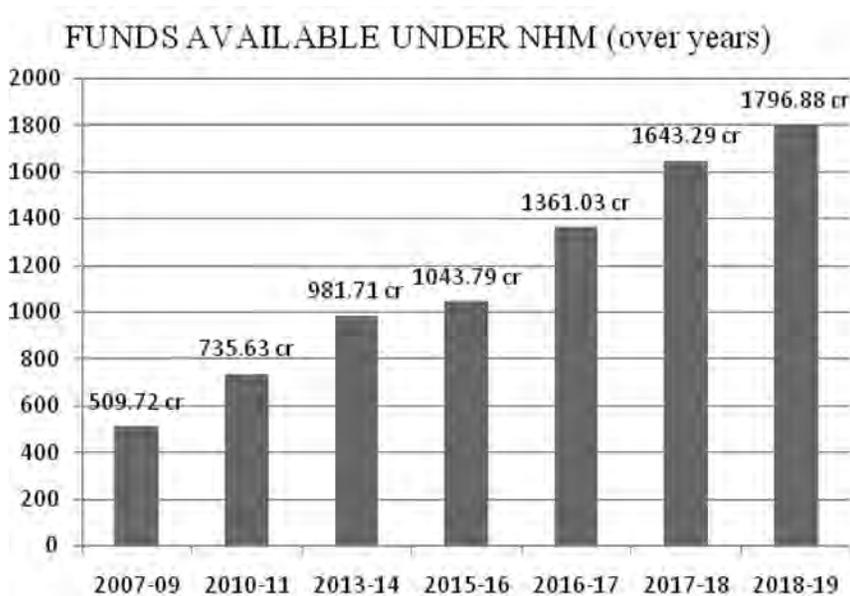


Figure-6 indicates the increase in budget allocated under NHM which significantly increased more than 200% from 2007 to 2019.

#### **Achievements Under NHM Odisha:**

Odisha state has achieved WHO recognition for the best performing state with 80% reduction in malaria cases and effective TB controlling program. ODISHA state achieved 2<sup>nd</sup> position in country in achieving maximum improvement OPD in public health facilities. ODISHA topped in measles and rubella (MR) vaccination campaign with 98% coverage. Government allotted 1300 crores for PPP model for the development and managing secondary care hospitals. State government inked pact with TATA trust and Prashanthi medical services for development of cancer care and heart surgeries for children respectively. Incentives stated by the state government for doctors, paramedical staff and ASHA workers. Implementation of MaaGruha in the state raises institutional deliveries. The health indicators of the state over the past ten years are:

**Table 3**

Healthindicators	2005-07	2007-09	2010-12	2011-13	2014-16
MMR	303	258	235	222	180
IMR	75	71	61	51	44
Institutional Deliveries	35.6%	44.1%	74.1%	80.8%	85.4%

Table-3 indicates MMR of Odisha which has come down over the years. For the 2005 it was around 303 (per 100000 live births) and over a decade it has reduced to 180. The IMR which was 75 (per 1000 live births) has reached to 44 over the decade. The state has witnessed a high rise in the number of deliveries which are carried in institutions. The rate which was 35.6% during 2005 has now reached to 85.4% which more than the national average. These values clearly indicate that the state is showing a gradual improvement in areas like maternal and child health and also progressing towards universal health coverage.

### **Innovations:**

ODISHA government started the process of formulating the State Health Policy and Vision for 2025. Focus has been shifted from fragmented service delivery approach to comprehensive and determined method of quality healthcare, management of PHC's by NGO's, post training supervision and monitoring of IMNCI-trained personnel by NGO, community monitoring, application of GIS technology.

### **Challenges:**

The study showed that that there was lack of coordination among multiple implementing agencies like Anganwadi and multipurpose health workers. The geographical coverage is a blot on health care in ODISHA due to regional disparities like tribal, remote rural and urban. The human resources management with acute staff shortages in numerous districts, unsatisfactory promotion avenues, low morale, high absenteeism were major obstacles. There is still lot of progress required in modernising health services, reducing out of pocket expenditure which has great consequences for the poor. Communication strategies should be designed to overcome challenges associated with illiteracy, lack of health awareness, limited accessibility of media.

### **Recommendations:**

Despite of having well reputed private and government hospitals in the state, few more corporate hospitals are still needed. There is a need to improve medical literacy in the state which leads to increase in availability of local doctors. The state is investing in health technology to promote scientific evidence based scientific

decision making and promotes efficiency, tap other sources (private donor agencies) to reduce out of pocket expenditure, shift the role of vertical programmes that are aimed at particular disease combined with availability of qualified and trained manpower, enforcement of standard treatment guidelines and referral protocols to ensure quality of healthcare and the health status of the state as a whole. However, through this study it is evident that the overall health status of Odisha is improving with the support of National Health Mission.

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## A Study on the Factors behind the Shortage of Doctors in Indian Villages

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### Abstract:

*The study looks at identifying the factors behind the shortage of doctors in Indian villages and finds out ways to find out the factors those encourage the doctors to move to villages. The study was done in the villages of Telangana, Andhra Pradesh and Karnataka. The study is conducted by eliciting response to the questionnaire from MBBS students, and registered Doctors. The sampling technique is simple random sampling method. The results showed that that 61.5% doctors are willing to work in rural areas but the percentage of doctors actually working in rural areas is very less (8.45%) which meant that certain factors are hindering the movement of doctors to villages. The major factor that affected the willingness of doctors to work in rural India is lack of proper Infrastructure in the rural areas in healthcare services. This study helped to identify the major reasons for the unwillingness of doctors to work in rural India and also explore the possibility of finding solutions.*

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### Introduction

Around the world, it is estimated that 57 countries have an absolute shortage of 2.3 million physicians, nurses and midwives. Majority of these countries lie in the African, south and south east Asian countries along with few European countries. India has less than one doctor for every 1,000 citizens, which is less than the World Health Organisation (WHO) standard that prescribes a doctor population ratio of 1:1,000.

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If we take our population as the base there is a stunning shortage of 3.3 lakh doctors just to meet the conservative guidelines in paper let alone exceeding them. In India, the top 10 causes of death in India today include diseases such as that of heart strokes, diarrheal diseases etc. 9 out of the top 10 diseases require specialist doctors to treat them. However, these diseases cannot be treated by doctors without postgraduate qualifications due to rigid Medical Council of India (MCI) regulations. Currently, MBBS-only doctors are not even trained nor allowed to treat these death causes in India. As per the Aarogya Bharat Report, the shortfall of doctors in India is likely to continue till 2039.

### **Challenges in India's Health Care System**

In India the rural health-care system is composed of three tiers. Sub-centres, primary health centres and community health centres. Sub-centres are manned by trained health workers and auxiliary nurse midwives, with each centre covering up to 5000 people. Primary health centres act as first point of communication between villages and medical professionals. They should have a doctor along with 14 paramedics and other staff. Community health centres are meant to have four medical specialists (a surgeon, physician, gynaecologist, and paediatrician) supported by 21 paramedic and other staff as well as 30 beds and facilities such as an operating theatre and radiology room. But India is not able to meet the set standards.

These shortages exist despite India having one of the largest medical education systems in the world, with more than 410 government and private medical schools having an annual intake of 50000 students for MBBS courses. City-bred and educated doctors are not willing to serve in rural areas, many of which still lack electricity and roads. Indian medical education is geared to train doctors to work only in tertiary care and specialised hospitals, so these areas become the primary professional aspiration and focus for career in healthcare.

During the past few decades, the central health ministry and state governments have attempted various strategies to attract doctors to rural areas, such as compulsory rural postings, linking rural postings to admission into postgraduate courses, and offering monetary incentives etc.,. Doctors trained in Indian systems of medicine such as Ayurveda, Siddha, and Unani are also being posted to government health facilities.

As a long-term measure, the health ministry in 2010 proposed a new course, a BSc in community health, to train primary health-care practitioners. The Medical Council of India (MCI), which oversees medical education, first concurred with the government on the need for such a course but later refused to approve the course, saying no one except MBBS doctors are permitted to prescribe medicines under Indian law. The Indian Medical Association (IMA) also opposes this course as well as bridge courses in modern medicine for graduates of Indian systems of medicine.

This complicates the situation as there is a shortage of MBBS doctors in rural areas due to various reasons.

## Global Scenario

Globally, the World Health Organization (WHO) estimates a shortage of 4.3 million physicians, nurses and other health workers worldwide, especially in many developing countries. Developing nations often have physician shortages due to limited numbers and capacity of medical schools and because of international migration: physicians can usually earn much more money and enjoy better working conditions in other countries. Many developed countries also report doctor shortages, and this traditionally happened in rural and other underserved areas. Reports as recent as January 2019 show that high growth areas like

Phoenix, Arizona are experiencing shortages. Shortages are being discussed in the U.S., Canada, U.K., Australia, New Zealand, and Germany.

As per the latest data, India stands at 67th rank amongst around 133 developing countries with regard to the number of doctors while in respect of number of nurses, India is at 75th rank. The total public expenditure on health (incurred by Central and State Governments) is around 1.1 per cent of GDP.

## Problem Identification

### Shortage of doctors

According to statistical data, the number of registered allopathic doctors possessing recognized medical qualifications (under MCI Act) and registered with state medical council for the years 2016 and 2017 were 25,282 and 17,982 respectively. At present, average population served per government allopathic doctor is 11,039. A Medical Council of India (MCI) report suggests that in July 2017, there were a total 10,22,859 allopathic doctors registered with the MCI or with state medical councils. With a population of 133.92 crore, the doctor patient ratio stands at 1:700 which is far away from the WHO standards. But more difficulty is faced in rural areas where around 83 crore population resides but with only 32,000 doctors.

Number of Medical colleges in India:

Total number of colleges:	493
Total number of seats:	62750
Total number of government aided colleges:	235
Total number Trust colleges:	216
Total number of government society colleges:	7
Total number of private colleges:	11

(Source- [mciindia.org](http://mciindia.org))

Although the number of health facilities has risen in the past decade, workforce shortages are substantial. More than 8% of 25300 primary health centres in the country are without a doctor, 38% are without a laboratory technician, and 22% have no pharmacist. Nearly 50% of posts for female health assistants and 61% for male health assistants remain vacant. In community health centres, the shortfall is huge—surgeons (83%), obstetricians and gynaecologists (76%), physicians (83%), and paediatricians (82%). Even in health facilities where doctors, specialists, and paramedic staff have been posted, their availability remains in question because of high rates of absenteeism. (Source- Lancet.com)

Rural India consists of 638,000 villages inhabited by more than 740 million individuals. A network of government owned and sub-operated sub centre, primary health care centres (PHC's) and community health care centres (CHC's) are designed to deliver primary health care to rural folks.

Current norms require one sub-centre per 5,000 persons, one PHC per 30,000 people and one CHC per 120,000 people in the plains. Smaller populations qualify for each of these centres in the tribal and hilly areas. Each PHC serves as a referral unit to six sub-centres and each CHC to four PHCs. A PHC has four to six beds and performs curative, preventive and family welfare services.

### **Shortfall in health infrastructure**

As per 2011 population in India it indicates total of 19% shortfall in sub centres, 22% in primary health care centres and 30% in community health care centres which clearly states the critical need of more doctors in rural India.

As of March 31, 2017, the country had a shortfall of 10,112 female health workers at primary health centres, 11,712 female health assistants, 15,592 male health assistants and more than 6,1000 female health workers and auxiliary nurse midwives at sub-centres. In fact, primary health centres across the country are in want of at least 3,000 doctors with 1,974 such centres operating without a single doctor. In community health centres, there is a shortfall of close to 5,000 surgeons.

If the entire country wants to achieve 1:1,000 ratio, it will need 2.07 million more doctors by 2030, according to a study published in the Indian Journal of Public Health, in September 2018. With the government sparing just 1.3 per cent of the GDP for public healthcare, as opposed to the global average of 6 per cent, shortage of government doctors means people will continue to incur heavy medical expenditure in private health care system. Therefore, India should take immediate steps to address this issue.

The following study mainly focuses on ascertaining the reasons why there is a shortage prevailing in the rural India through feedback from doctors themselves and how we can work to address this major challenge.

### **Objectives**

- To identify the reasons behind shortage of doctors in India.
- To ascertain the reasons for reluctance of doctors to work in the villages.
- To explore the possibility of increasing the number of doctors in the country.
- To find out the factors those encourage the doctors to move to villages.

### **Scope of Research Study**

Scope of the study covers the shortage of doctors in Rural India and finding out the reasons as to why the doctors aren't willing to work in Rural India. Data collection is limited to the areas of Telangana, Andhra Pradesh and Karnataka. The study is conducted by eliciting response to the questionnaire from MBBS students, and registered Doctors.

### **Hypotheses**

The study is meant to test the validity of the following hypotheses.

- Quality of basic infrastructure has no impact on the willingness of the doctors to work in Rural India.
- Unaffordable consultation fees and treatment cost of the people in villages do not have any bearing on the decision of doctors to work in Rural India.
- Quality of working facilities and equipment do not have significant impact on the decision of doctors to work in Rural India.
- Proper connectivity to other cities from the rural area is not a significant influencing factor for doctors to work in Rural India.

### **Research Methodology**

#### **Research Design**

The study is conducted covering the states of Telangana, Andhra Pradesh, and Karnataka.

#### **Research Approach**

The respondents for this study questionnaire are doctors working/ who have worked in rural and urban areas in the selected regions, students pursuing their bachelor's in medicine (Allopathy and AYUSH). To collect the data, we have prepared a questionnaire and circulated it to the target groups through an online platform.

The questionnaire mainly focused to find out the primary reasons for doctors not showing willingness to work in rural areas. The questionnaire also consisted of both open-ended and close ended questions to find out the most possible reasons for the present scenario.

### **Sampling Method**

The sampling technique which we used is simple random sampling method. The questionnaires circulated to various groups of target population to know about the ground realities. Efforts were also made to reach a few respondents in person to collect the required data. The sample size determination was done using the formula developed by Hogg and Tannis as the population is finite in nature. The required sample size is 384 for this study however we could manage to get 213 responses.

### **Data Analysis and Interpretation**

*Out of 213 responses that we have received, 53.1% were women and 46.9% were men. Around 60.2% were in the age range of 21-24.*

*61.5% were willing to work in rural areas but the percentage of doctors actually working in rural areas is very much less (8.45%) which meant that certain factors are hindering the movement of doctors to villages.*

Few of the major reasons listed out by the participants expressing the desire to work in rural areas

- Serving people, as their profession teaches them to do so and it gives them internal satisfaction.
- Many have a motto to increase health awareness in rural areas.
- It gives them major exposure to difficult situations and experience in dealing with tough and complicated health issues.

### **Factors Measurement Scale**

All the respondents in this study are doctors/ medical students who are either working or studying. Their willingness to work in rural area is measured over a scale of 1-5 (1- Very much interested, 2- fairly interested 3- interested 4- not interested 5- not sure). Similarly the following nine factors are rated on a scale of 1-5 ((1- Very much significant, 2- fairly significant, 3- significant, 4-not fairly significant, 5- not at all significant)

- 1) Infrastructure
- 2) Pay scale/ salary of doctors

- 3) Secondary healthcare
- 4) Career prospects in specialization
- 5) Connectivity to other places
- 6) Education in schools for families of doctors
- 7) Basic necessities (water, electricity)
- 8) Maintenance of hospitals
- 9) Affordability of patients to doctors' fee

### Analysis of the data-

Our study has used correlation and regression analysis. Table 1 provides information regarding the mean values, standard deviations and bivariate correlations between the variables, showing high correlations between several independent variables.

Table 1: **Correlation Coefficient**

	Infra-structure	Pay Scale	Basic Necessities	Maintenance of hospitals	Affordability of patients to doctors fee	Secondary health care	Career prospective in specialization	Connectivity to other places	Education in schools for families of doctors	Willingness to work in rural areas
Infrastructure	—	0.493	0.534	0.602	0.406	0.550	0.511	0.549	0.548	0.46
Pay Scale	0.493	—	0.466	0.549	0.421	0.580	0.572	0.454	0.479	0.17
Basic Necessities	0.534	0.466	—	<b>0.704</b>	0.569	0.589	0.472	0.643	0.621	-0.24
Maintenance of Hospitals	0.602	0.549	<b>0.704</b>	—	0.590	<b>0.682</b>	0.547	<b>0.684</b>	0.297	-0.003
Affordability of patients to doctors fee	0.406	0.421	0.569	0.590	—	0.513	0.476	0.552	0.482	0.032
Secondary healthcare	0.550	0.580	0.589	<b>0.682</b>	0.513	—	0.621	0.645	0.610	0.48
Career prospective in specialization	0.511	0.572	0.472	0.547	0.476	0.621	—	0.585	0.626	0.48
Connectivity to other places	0.549	0.454	0.643	<b>0.684</b>	0.552	0.645	0.585	—	0.649	-0.23
Education in schools for families of doctors	0.548	0.479	0.621	0.597	0.482	0.610	0.626	0.649	—	0.086
Willingness to work in rural areas	0.46	0.017	-0.24	-0.03	0.032	0.048	0.140	-0.23	0.086	—

Maximum correlation in the variables are seen between 1) Maintenance of hospitals and basic necessities required in hospitals of rural areas 2) Maintenance of hospitals and connectivity to other places 3) Maintenance of hospitals and secondary healthcare.

Table 2: Linear regression and ANOVA analysis-

Factors	R	R <sup>2</sup>	Anova (Significance)	Regression equation
Infrastructure	0.51	0.003	0.460	2.667+0.052
Pay Scale	0.21	0.0	0.759	2.722+0.023
Secondary Healthcare	0.42	0.02	0.537	2.653+0.053
Career Prospects in Specialization	0.143	0.20	0.37	2.468+0.150
Connectivity to other places	0.003	0.00	0.961	2.778-0.004
Education in schools for families of Doctors	0.084	0.07	0.222	2.591+0.083
Basic Necessities	0.020	0.0	0.772	2.814-0.021
Maintenance of Hospitals	0.022	0	0.754	2.724+0.022
Affordability of patients to doctors fee	0.011	0	0.874	2.746+0.11

The above table provides the *R* and *R*<sup>2</sup> values. The *R* value represents the simple correlation which indicates a high degree of correlation. The *R*<sup>2</sup> value indicates how much of the total variation in the dependent variable, can be explained by the independent variable. The **ANOVA** column, which indicates the influence of the independent variables (9 in number) on the dependent variable (i.e., willingness to work in rural areas) in the regression study and how well the regression equation fits the data (i.e., predicts the dependent variable).

Based on the above statistical analysis, Infrastructure has maximum degree of correlation with willingness of doctors to work in rural India followed by secondary healthcare and Pay Scale of doctors.

**Table 3 Weighted average Ranking**

Rank	Infrastructure		Pay Scale		Secondary Healthcare		Career Prospects In Specialization	
1	102	<b>510</b>	87	435	56	130	102	<b>510</b>
2	42	168	60	240	82	328	39	156
3	36	108	37	111	56	168	48	144
4	17	34	23	46	14	28	15	30
5	11	11	6	6	5	5	9	9

Rank	Education in Schools for Families of Doctors		Basic Necessities		Maintenance of Hospitals		Affordability		Connectivity to Other Places	
1	92	<b>460</b>	91	455	91	455	88	440	82	410
2	43	172	52	208	51	204	53	212	49	196
3	45	135	40	120	44	132	39	117	52	156
4	20	40	22	44	13	26	22	44	21	42
5	13	13	8	8	14	14	11	11	9	9

Rankings based on a scale of 1-5 where (1= Very significant, 2= fairly significant 3= significant 4= slightly significant 5= not at all significant)

Based on the above values infrastructure, Career prospects in specialization and education in schools for families of doctors have highest significance in influencing the decision of the doctors' willingness to work in the villages.

## Conclusion

Our study findings indicate

- Quality of basic infrastructure has significant impact on the working of doctors in Rural India.
- Un-remunerative consultation fee and treatment cost do have bearing on the decision of doctors to work in Rural India.
- Quality of proper facilities and maintenance has an influence in the doctors' decision to work in Rural India.

- Proper connectivity to other cities from the rural area has an influence on doctors' decision to work in rural India.

This study employed and tested nine variables and their impact on willingness to work in rural areas. These variables were tested through correlation to find out the level of relationship among them. In order to find their willingness to work in rural areas, regression analysis was used. The regression test was further checked with Anova test to ascertain whether the independent variables have significant impact on the dependent variable.

The major variables that have most significance are identified as Infrastructure, secondary healthcare and PayScale.

Some of the other major reasons why doctors are unwilling to work in rural areas as indicated by participants in response to an open end question in the questionnaire are as follows.

- Lack of proper medical equipment and facilities to perform major surgeries
- Lack of awareness among the patients in rural areas about healthcare (do not believe in allopathy)
- Abusement and harassment of doctors

## **Results and Recommendations**

*After the complete analysis and research it is found that 61.5% (out of the total sample size of 213) are willing to work in rural areas but the percentage of doctors actually working in rural areas is very less (8.45%) which means that certain factors are hindering the movement of doctors to villages.*

*The major factor that affected the willingness of doctors to work in rural India is lack of proper Infrastructure in the rural areas in healthcare services.*

*Therefore, major focus should be on improving the infrastructure instead of focusing on forcing of doctors to move to rural areas. Many of doctors are willingly work even in low pay scale but infrastructure, which is the main component of delivering good healthcare is poor and lacking. Infrastructure of hospitals in rural areas include all the basic physical and organizational structures and facilities that help run the hospital efficiently like power supply, building and basic necessities. The government can play a major role in this regard by improving the situation and also the heads of villages (talukas and panchayat) can take the initiative to improve the infrastructure to attract hospitals in the villages. This will attract more doctors to rural areas.*

The other two major variables identified through data analysis are secondary healthcare and pay scale of doctors. Many of the doctors want to improve their skills and do majors in specializations in one particular field. But there is shortage of secondary healthcare (specialization) in rural areas. Since it is difficult to introduce secondary healthcare in every village, government can at least try to introduce speciality hospitals in those fields (like cardiovascular, diabetes, gastro intestinal, cancer) in major towns in the districts.

PayScale of doctors is really low in rural areas which dissuade them from working in the villages. Many medical students have to pay huge amount of money for completing their course and therefore would expect immediate returns which are not possible in villages. A proper regulation of the fees will help students have lesser financial burden and also develop an inclination to work in rural areas.

*One of the questions in our study which says if the participants were hailing from rural background and if they had studied in a medical institute located in their rural area whether they would be willing to work in rural areas, got a massive positive response from 83.6% of the respondents.* This indicates that building more medical institutes in rural areas and giving seats to students hailing from that area to make sure they work in their area can result in two things-

1) Better job opportunities for (medical) students from rural areas and 2) more number of doctors in rural areas.

In order to cope up with 'doctors' deficiency' in rural areas, the Governments must develop model villages under smart villages concept with the collaboration of the private sector.

This concept would allow holding, retaining and recruiting fresh talent by facilitating their stay and improvising their quality of life comparable with their counterparts in the city.

This study helped us to identify the major reasons for the unwillingness of doctors to work in rural India and also explore the possibility of finding solutions.

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# Dynamics of Knowledge Management in Food Processing Engineering: An Empirical Study of Flourtech

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## Abstract:

*The factors of knowledge management are playing a pivotal role in every organisation apropos the specific industry. Food processing engineering industry is no exception in this context. In fact, the empirical studies attain utmost importance as they delineate the vivid account of reality since they trace the 'friction' where the rubber meets the road. In this study the verticals of machine manufacturing, fortification of end-product during the process of value addition and the challenges posed by global operations and their mitigation has been studied from the point of view of knowledge management. The methodology includes an inclusive case study research entailing the primary and secondary data sources. This study takes recourse to qualitative research tools. This paper has traced the odyssey of knowledge management in SME company. Two strategic models have been found after analysis of data- one on knowledge management and; another one on brand building. It has established that the implementation of knowledge management will help enhancing the brand equity which is very crucial for SMEs.*

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## Introduction

This study has adopted the 'firm performance' approach (Gold et.al.2001) for knowledge management whereby the improvements in myriad parameters of the processes related with innovation, co-ordination, production, after sales service, required changes and accelerated responsiveness to customers reaches the zenith. With this in view, we traced the studies related with Small and Medium Enterprises (SMEs) in the domain of knowledge management. The qualitative empirical research methodology has been used for this study. Besides using the single case study in the

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genre of research towards empirical questions and their answers, other tools of qualitative research have also been used. This study has taken cues from “model of science that has tended to dominate thinking about how knowledge gets generated and served” (Peim, 2018, p.203). This study has been inspired by the importance of empirical research propounded by Heath(2018). This history of studies in the domain of knowledge management has been traced to formulate the ideas leading towards probable gap so far as the SME sector is concerned.

## **Review of Literature**

It has been perceived that knowledge is an actionable information which comes into existence because of intuitive thinking. Knowledge Management is an umbrella term used in various industries with various aims. However so far as implementation of Knowledge Management in SME concerned, the studies are either hazy or the scholars had not paid enough attention. Nevertheless, we are making an attempt to tress the relationship of Knowledge Management in small & medium enterprises and the same has been delimited in forthcoming lines. For the first time Österle et. al. (2001) delved into the role of intangible factors like personal effectiveness, interpersonal relationship, trust and relationship while undertaking the research on networks in organisations. Followed by this research Back et. al. (2007) underlined the importance of efficiency, reduction of risk and innovativeness in knowledge management. Wu and Lin (2009) emphasized on strategy based process for implementing knowledge management. This epoch-making research established the importance of empirical study in the literature on knowledge management. So far as the study of qualitative characteristics are concerned in the category of SME, Gilmore et. al. (2013) concluded that the SMEs are vibrant and authentic source of ideas and knowledge leading to growth. Grant and Verona (2015) suggested that strategic orientation of knowledge management is a pre-requisite after empirical research to gain maximum benefit from knowledge management. Mitroviæ et. al (2018) showed through their research that a systemic and performance oriented approach is of utmost importance coupled with cultural tinge for knowledge management.

Since most of the SMEs are run by family members of founder entrepreneur, effective human resource practices become paramount (Eddleston et. al.2018). Short & Gray(2018) continued working in this direction and proved that Human Resource Development is a must in SMEs for successful implementation of any change required by an organisation.

The review of literature culminates by the study undertaken by Ferenhof (2018) which elaborated the entire spectrum of knowledge management in SME exclusively and brought the importance of strategy, culture and brand building into focus.

## Methodology

### Source of Data:

Primary data had been obtained by unstructured interview of Chairman and CEO of Flourtech Group and C-suite executives. The focus Group was used for collecting data from Heads of the Departments.

Secondary sources of data of Flourtech have been obtained which are either available in public domain or displayed on the websites. Some of the data have also been used which were in the form of festschrift, microfiche, pamphlets, brochures, handout for visitors and other material as disseminated in public domain. This exploratory research has taken recourse to referring to the material for internal circulation also. Since authors had close association with Flourtech they had become internal observers and thus could delineate the cues emanating from the dynamics and under currents of this SME.

### Observation: The Exclusive Tool to Empirical Research

This qualitative tool could be used to position the authors as internal observers in consonance with the research by Luders (2004) who found out that ‘anyone who wishes to make an empirical investigation of human beings, their everyday practices’ gets two options.” One can hold conversations with participants about their actions and collect appropriate documents in the hope of obtaining, in this way, rich information *about* the particular practice in which one is *interested*. Or else one looks for ways or strategies for taking part, for as long as possible, in this everyday practice and becoming familiar with it, so as to be able to observe its everyday performance” (p.222). It helps “observation in a broader sense as a *flexible, methodologically plural and context related strategy* that could incorporate widely different procedure” (p.224). The authors had been consulting Flourtech, so this tool was handy to use.

### Case Study: The Consonance of Empirical Study

[Adapted from the website of Flourtech & other sources of this company]

‘A case study is an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 1994, p.13)’. Case studies are the preferred strategy when “how” or “why” questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real life context. As a research strategy, the case study is used in many situations to contribute to our knowledge of individual, group, organizational, social, political and related phenomena. It has also been reported that the case study research is an inquiry that focuses on describing, understanding, predicting, and/or controlling the individual (i.e. process, animal, person, household, organization,

group, industry, culture or nationality) (Woodside, 2010). In empirical study research is the attempt to answer “who”, “what”, “where”, “when” and “how” questions through description and involves answer to these questions through reports provided by the direct participants in the case; “There are four factors that help to explain why case studies have been, and remain, critically important in relation to the task of building a knowledge base for therapy. First, case study offers a form of *narrative* knowing. Second, case studies provide an efficient way of representing and analyzing *complexity*. Third, case studies generate *knowledge-in-context*. Finally, case studies are an essential tool for understanding *practical expertise in action*.” (McLeod, (2010), p.8). We have taken recourse to case study as a part of empirical research.

#### **Informal Interaction:**

It had been used as a tool for research with chairman and CEO from the same family. In this effort other family members, friends, relatives all became part of interaction along with employees and customers.

#### **Focus Group Discussion:**

This tool is used for obtaining the data from employees about their attitude, views, experiences and expectation regarding empirical questions and explore the probability of finding a pattern for answering these questions (Hennink, 2014)

#### **Unstructured Interview:**

An unstructured Elite Interview was conducted to get the prophetic vision of the Chairman of Flourtech. In order to obtain data open ended questions are asked from the persons who are being interviewed to fathom their perception. In fact, perceptions are equal to values of the participating persons in unstructured interview as it creates a cognitive positivity which results in finding out the ‘reality’ .(Given, 2012)

#### **An Inclusive Case: Flourtech Engineers Private Limited**

“Flour Tech Engineers Pvt Ltd. (Flourtech)” was incorporated in the year 1988, as a leading manufacturer, exporter and supplier of a broad range of Processing Machinery for our customers. Its product assortment includes Flour Mill Machinery, Rice Mill Machinery, Whole Wheat Chakki Atta Plant, Pulse Processing Plant, Spice Processing Plant, Soya Grit/D.O.C. Grinding System, Maize Grit and Corn Flakes Plant, Energy Food Plant, Besan Plant and Dalia Making Machine. These processing machinery are manufactured by employing finest grade basic material in full compliance with the set industry guidelines under the supervision of well trained workforce. To cater to the diverse demands of valued clients, Flourtech offers these products in different specifications. Apart from this, Flourtech is offering these processing machinery at leading market price. Offered products are highly

appreciated across the market for their reliable performance and longer service life.

To manufacture the offered processing machinery as per the set industry norms, Flourtech has developed a well-equipped and designed infrastructure facility at its premises. To handle this infrastructure and execute business related tasks, the company has hired a team of deft professionals. To achieve the organizational goals and objectives, company professionals are working with full dedication and close coordination with each other. The company has been able to deliver all the offered processing machinery on time, as it has developed a wide distribution network. The company exports to **African Continent**. The company has attained a distinct and dynamic position in the market.

### **Vision**

Become the foremost brand, providing all-inclusive solutions for requirements of food processing engineering by offering innovative and efficient machines, equipment and allied services.

### **Mission**

Development and progress of our company through high performance and innovative products that meet the requirements of international clients.

### **Skilled Professionals**

Flourtech has a team of highly skilled and talented professionals. These professionals have years of working experience in this field with the constant support and dedication of our employees. These professionals are selected through industry approved selection procedures. They are able to cater the diverse demands of valued customers. To improve and enhance their skills as per the upgraded trends and developments, Flourtech provides essential training to the employees periodically.

Types of professionals (approx. 190) in the company are:

- i. Production experts, ii. Quality inspector, iii. Warehouse agents,
- iv. Procurement experts, v. Sales professionals

## **Operational Infrastructure**

To manufacture the vast assortment of processing machinery, Flourtech has developed a well-designed infrastructure unit at its premises. Its infrastructure facility is placed with all the required tools and equipment for the manufacturing of the offered processing machinery. For streamlined execution of all the business related tasks, Flourtech has segmented its facility into various departments such as manufacturing, quality, warehouse and R & D department. Each and every department is managed by our well qualified professionals in such a way that Flourtech is able to deliver all the products within promised period of time.

## **Quality Statement**

Flour Tech Engineers Pvt Ltd. is a quality driven company with its central focus on achieving total customer satisfaction through the best quality products and services. To ensure that their valued clients get the best in the industry, they adhere to a strict quality control policy as per which a dedicated Quality Control Unit is established in-house at their factory premises.

**Product Groups:** Flourtech is a leading company in the producing of -

- i. Flour Mill Machinery
- ii. Rice Mill Machinery
- iii. Whole Wheat Chakki Atta Plant
- iv. Pulse Processing Unit
- v. Spice Processing Plant
- vi. Soya Grit/ D.O.C. Grinding System
- vii. Maize Grit & Corn Flakes Plant
- viii. Energy Food Plant
- ix. Besan Plant
- x. Dalia Making Machine

The above mentioned plant machineries have been developed utilizing state-of-the art technology to provide excellent results to the customers and serving clients with supreme quality product yields that are not just meeting but exceeding their expectation by providing equipments and nutrients for end-products meant for consumers in various geographies over continents of Asia, Africa and aiming at Americas also Flourtech Advance Quality Lab equipments. Of late, it has also started making nutrients and the same has now become a vertical in its abridged form known as Advance Quality Control (AQC). Flourtech has been manufacturing various machines and equipment in conformities as stipulated in The Quality Management System apropos ISO 9001: 2005. This has helped this company to manufacture and

supply of quality Flour Mill Plant, Rice Mill Plant, Corn Flakes Mill Plant, Maize Mill Plant, Dal Mill Plant And Spice Mill Plant.

AQC has obtained FSSAI (Food Safety and Standard Authority of India) standard which reflects the quality of its products.

## **Tools used in Knowledge Management**

### **Industry Analysis:**

At the very outset Flourtech decided to gain an insight of the industry so that it could produce better products than the competitors in the industry of food processing engineering - machines used and nutrients required for enriching the end-product.

### **SWOT Analysis:**

This analysis was conducted by Flourtech to understand the firm specific insights into its strength and weakness which are internal and therefore controllable. Flourtech succeeded in identifying the opportunities in global market and could develop strategies for mitigating the onslaught of threats outside its influence and control.

### **Semantic Clustering Analysis:**

Since Flourtech has got global footprints especially in Asia and Africa semantic clustering analysis was conducted to find out the gaps where the products of Flourtech could concentrate to garner the benefit of being the first mover.

### **Knowledge Audit:**

Flourtech wanted to usher in the changes required in restructuring so that varying needs and objectives of the company could be fulfilled by using the tools of knowledge management. This was required because the core competencies of the personnel were to be harnessed in addition to; realising their potential.

### **Increasing Knowledge Resource:**

As a corollary to this Flourtech devised the ways and means to reach the Knowledge Resources available in public domain on the 'Platform'; which is now all pervasive across the globe.

### **Development of Human Capital and Intellectual Capital:**

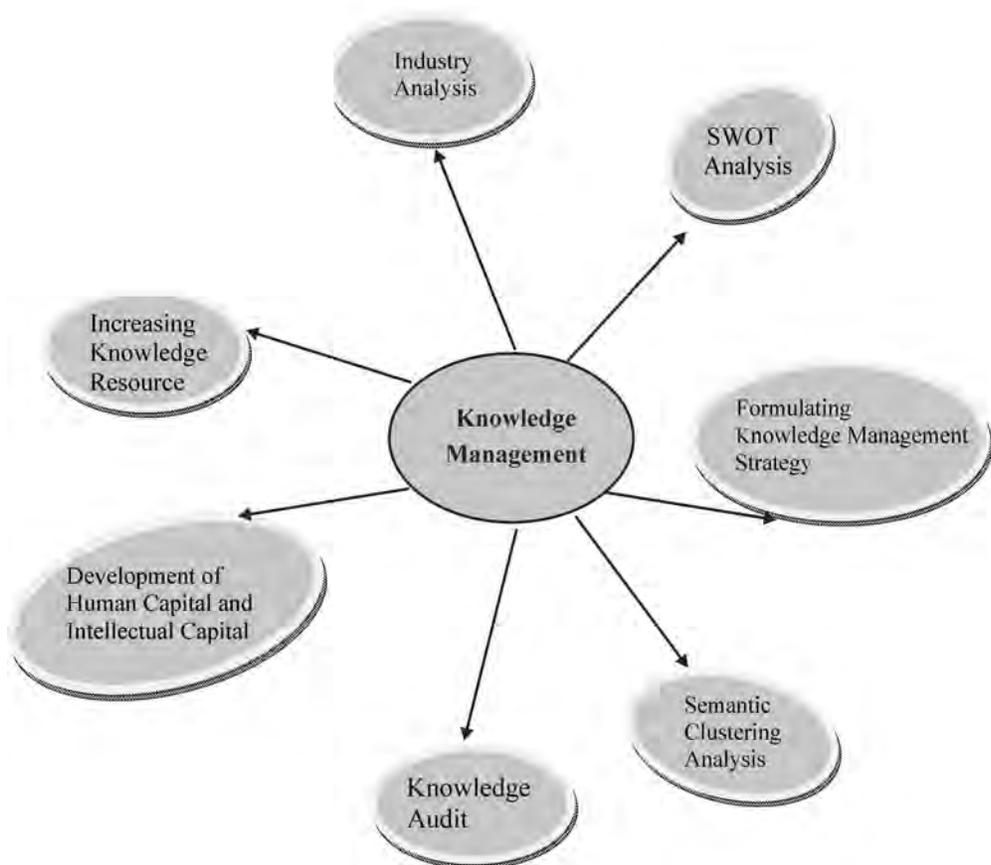
Human capital is a part of intellectual capital besides the other two parts - Organisational Capital and Social Capital. Various developmental actions were taken to increase this succinctly. Preparation of Corporate Yellow Pages (Subject Matter Experts) was an important of this outcome exercise.

### Formulating Knowledge Management Strategy:

Once Flourtech could use these explicit and tacit sources of knowledge, it developed its strategies for exponential growth in the ongoing financial year 2018-19 as against incremental growth of past two fiscal years.

It is obvious that Flourtech followed the 'Hub and Spoke Model' in tandem which has been delineated in Figure:1 as given below:

Figure 1:  
**Knowledge Management of Flourtech**



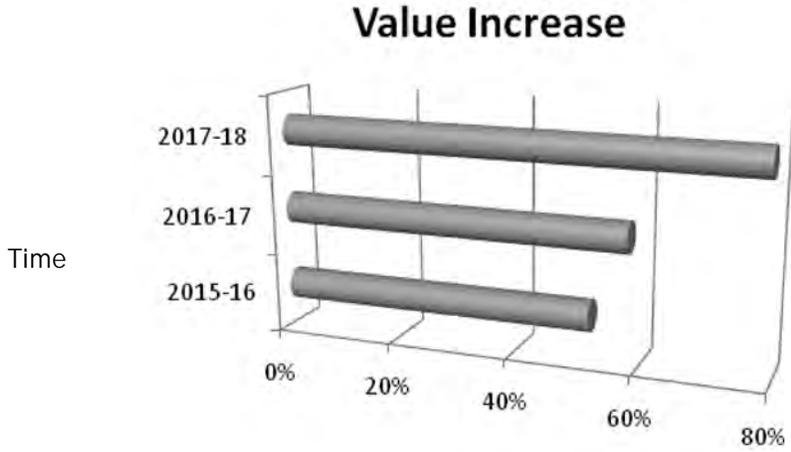
### Findings and Resultant Benefits

#### Increasing Value:

Flourtech implemented Knowledge Management during financial year 2016-17 when the top management wanted exponential growth. They consulted Dr. Krishna Nath Pandey for the ways and means to translate this into reality. It was decided to use

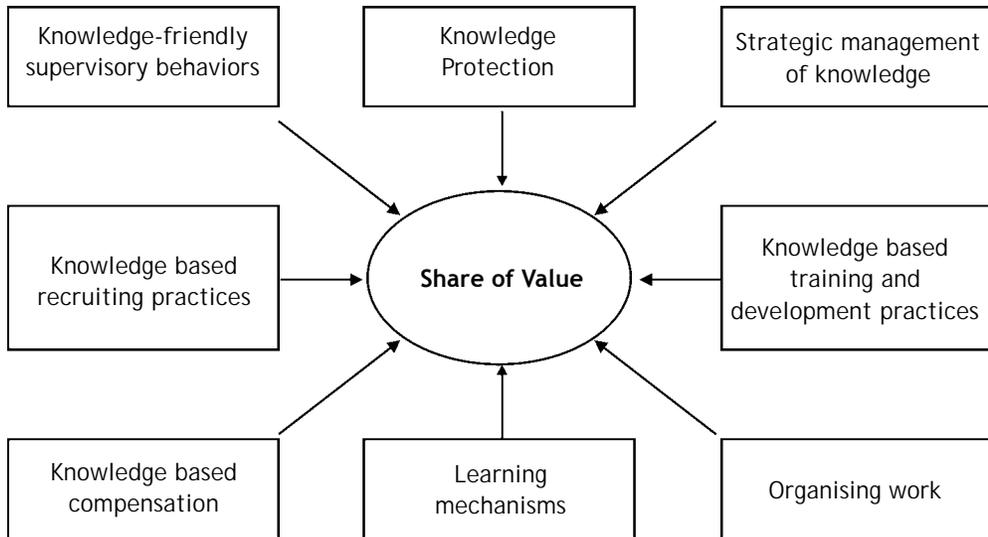
the tools and driver of knowledge Management as implementation led to increase value as given in Fig 2. This has been taken into account as on 31<sup>st</sup> December 2018

Figure 2:



### Composite Share of Value

Flourtech adopted effective knowledge methods that will rise in share value in the year 2017-18 studied by diagrammatically-

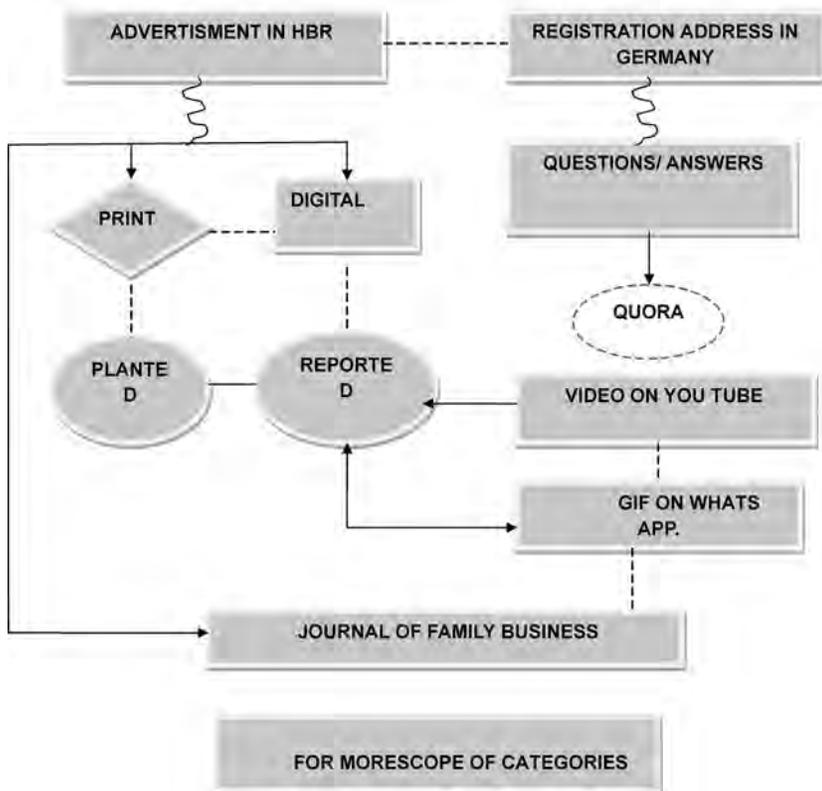


**Robust Strategies:**

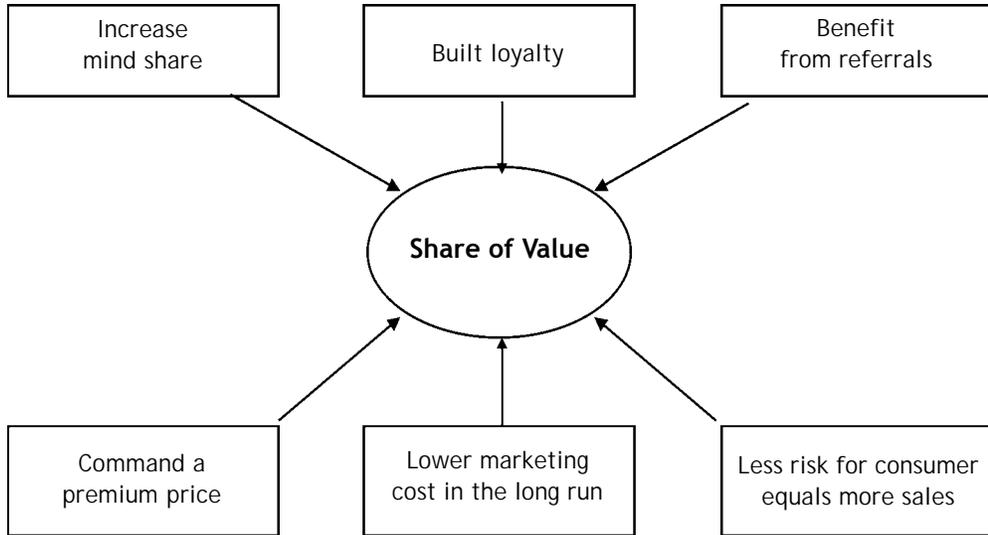
Flourtech undertook Knowledge Management as part of 'Change Management' One of the most important management functions is change management. Change management ideally should be comprehended as an interactive process that links daily work practices with strategic, directed change programmes and performance goals. The theory of change propounded by Kurt Lewin as quoted by Jones and George (2011) is known as *force-field theory*. This theory depicts a wide variety of forces which come into existence from structure, culture and control systems of the operation of an organization which do not allow any change. 'At the same time a wide variety of forces arise from changing task and general environments that push organization'

Flourtech prepared Robust Strategy for using Knowledge Management to reap the benefits for saving time, reducing cost, optimizing the use of resources and converting the company into a learning organisation. The increase of brand equity was of utmost importance to Flourtech. They formulated a strategy in this regard which has been delineated through a model as specified in Figure 3.

Figure 3:  
**BRAND BUILDING MODEL**



Effective branding is one of the cornerstones of any viable marketing strategy, it is one of the most important parts of Flourtech. Effective branding creates an enduring perception in the minds of your customers and distinguishes you from your competitors. An investment in branding can pay off in several ways.



Effective branding is a continuous process. Evaluating knowledge management in branding helped flourtech market position periodically to make sure it's fresh and relevant.

**LEGEND:-**

-  DUMMY BUT SIMULTANEOUS ACTIONS.
-  MINOR ACTIONS
-  MAJOR ACTIONS
-  INTERLOCKED
-  TO MONITOR THESE FORTNIGHTLY
-  SUPPLENESS

### **Customized Solution for Optimized Performance:**

Flourtech has reoriented itself for mass production and customized production at the same time. This could be possible by creating a cohesive culture and refreshing the skill set of employees without any extra cost. In fact, Flourtech increased its intellectual capital manifold comprising of human capital, social capital and organisational capital.

### **Future Readiness:**

Flourtech has geared up itself for obtaining *Standard SI 25006*. It has all the making on changes required for conducive culture which is the very basis for any knowledge management related functions. The informed strategy and understanding of challenges related with cost versus benefit ratio was the guiding star for this company.

Flourtech is also mulling over their plan for participating in Most Admired Knowledge Enterprise (MAKE) award.

### **Conclusion**

The studies on knowledge Management in SMEs are few and far between. When it comes to study knowledge management from the performance oriented point of view of knowledge management in SMEs; the researchers do not take interest in it. This is the truth thus far. We have made an attempt to address this issue through our study. The congenial relationship between qualitative and quantitative conjoining has helped to bring out the real case of a SME company where knowledge management, in its boarder umbrella; has helped exponential growth for Flourtech. Two models which emanated as a result of this study may be treated as harbingers for knowledge management implementation and increasing brand equity in SMEs with contextual sensitivities. The intellectual capital of a SME may also be increased by knowledge management which is the sole outcome of this study and it may be emulated by various industries falling in SME category.

Rationale behind the recommendation is that knowledge management in SMEs is often a neglected area of study:

1. Knowledge management is an area often neglected by SMEs because it can seem less related to turning a profit than other operations. However, by neglecting knowledge management SMEs suffering later down the line in terms of technology.
2. When staff members leave, they'll take important knowledge with them if it hasn't been recorded. If SMEs don't find a way to manage knowledge effectively,

it only exists in people's heads and organizational knowledge will gradually drain away over time.

3. While acknowledging that the context of SMEs calls for a reconfiguration and resizing of KM practices, KM issues in SMEs have largely been neglected further observe that the lack of focus on KM cannot be attributed to only issues of scale, since SMEs often use creative and lean approaches to overcome resource constraints. After reviewing, it is concluded that KM do not fully apply to SMEs (i.e., the flow of the dynamic model of knowledge creation partially applies).

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### Appendix

The following individuals of Flourtech participated in informal unstructured interaction and other tools used for this research. The specific activities in which they participated are indicated against their names.

Sl. No	Name	Position	Activity
1.	Mr. Sanjay Gupta	Chairman	Elite Interview
2.	Ms. Bhavya Gupta	CEO	Interview
3.	Ms. Neetu Arora	Chief Controller & Director (Finance)	Interaction
4.	Mr. Anup Kumar Nanda	Director (Marketing)	Interaction
5.	Mr. Manish Mehrotra	Director (Production)	Interaction
6.	Mr. Gaurav Agarwal	Manager (Marketing)	FGD
7.	Mr. Ashish Garg	Manager (Marketing)	FGD
8.	Mr. Mahesh Pathak	Manager (HR)	FGD
9.	Mr. Navneet Singh	Assistt. Manager	(IT)
10.	Ms. Ritu Tiwari	Executive Assistt.	FGD





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