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Changes Made in The Public Healthcare Infrastructure in Rural and Tribal India in Modi 1.0 Regime

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Abstract:

The main scope of the people living in rural and tribal areas for getting treatment for their ailments is the public healthcare infrastructure available there. The three pillars of the public healthcare sector are: Sub Centres (SCs), Primary Health Centres (PHCs) and Community Health Centres (CHCs). To highlight the changes made in the public healthcare infrastructure in Modi 1.0 regime this article made use of two reports on Rural Health Statistics – 2013-'14 and 2018-'19. It is inferred from the data analysed, in comparison with 2014 in 2019, there is an improvement in the number of SCs in position, the number of SCs and PHCs with regular water supply, power supply and approach road and a decrease in the number of PHCs without doctors, lab technicians and pharmacists in rural areas. However, the shortfall of healthcare centres and the average rural population covered by a healthcare centre increased between 2014 and 2019. There is also a shortfall in other facilities such as operation theatre and labour room. The number of CHCs functioning without specialist increased. The number of SCs without health workers and PHCs without health assistants increased. This is almost true to tribal areas also. All these mean that the public healthcare infrastructure and the manpower position and other facilities available there, experienced a negative change in Modi 1.0 regime. Hence it is necessary to undertake some policy measures to improve healthcare facilities available in rural and urban India.

Key words: Sub Centres; Primary Health Centres; Community Health Centres; Public Healthcare; Tribal People

The public healthcare sector functioning in India is a three tier one. Sub Centres (SCs), Primary Health Centres (PHCs) and Community Health Centres (CHCs) are the three pillars of the healthcare infrastructure available in rural and tribal India. The Sub Centre is the first contact point between the primary healthcare system and the community. SCs provide services related to maternal and child health, family welfare, nutrition, immunization and control of diarrhoea and communicable diseases. The Primary Health Centre is the first contact centre between the rural people and the medical officer. PHCs provide curative, preventive, promotive and family welfare services. A PHC is a referral unit for six SCs. The Community Health Centre is the first contact point between village people and specialists. The services provided by a CHC are: obstetric care and specialist consultations. A CHC serves as a referral centre for four PHCs. Apart from these, there are also Sub-divisional/Sub-district Hospitals and District Hospitals for referral healthcare services (GOI, Rural Health Statistics - 2018-'19).

Each SC should be manned by at least one auxiliary nurse midwife (ANM)/one female health worker [HW(F)] and one male health worker [HW(M)]. Under the National Rural Health Mission (NRHM) one more ANM can be appointed on contract basis. One lady health visitor (LHV) is appointed to do the supervision work of six SCs. While the Central government pays the salaries of ANMs/HW(F)s and LHVs the concerned state gives the salary of HW(M). In a PHC, there must be a medical officer along with 14 paramedical and other staff. Another two more staff nurses can be appointed on contract basis under the NRHM programme. In a PHC, it is also necessary to have 4-6 beds. All PHCs are established and maintained by State governments under MNP (Minimum Health Needs)/BMS (Basic Minimum Services) programme. CHCs are also established and maintained by state governments under MNP/BMS programme. In each CHC, it is necessary to have four medical specialists

(one surgeon, one physician, one obstetrician or gynaecologist and one paediatrician), who are supported by 21 paramedical and other staff. A CHC must have 30 indoor beds along with one operation theatre, X-ray machine, labour room and laboratory. Further, as per the Indian Public Health Standards (IPHS), there should be a sub centre for every 5,000 rural people in plain areas and for every 3,000 people in hilly/tribal areas. For every 30,000 people in plain areas and 20,000 people in hilly area it is necessary to have a PHC. For CHCs, it is directed that in rural area there should be a CHC for every 120,000 people and in hilly area, it is for 80,000 people (GOI, Rural Health Statistics - 2018-'19).

The functioning of a country's healthcare system depends on the public healthcare infrastructure that the country has. In other words, the performance of a country's healthcare system depends on the number of healthcare centres functioning in a country, manpower available in various centres, equipment available for testing and basic facilities such as: toilets, drinking water, electricity, operation theatre, labour room and all-weather approach roads. Hence, it is necessary to bring to light the lapses existing in the public healthcare sector in order to take appropriate measures for making it healthy.

Importance of The Study

In rural areas in almost all countries, healthcare facilities available are insufficient to the requirement. In India, it is highly insufficient. In comparison with urban areas the public healthcare infrastructure available in rural areas is much less and in comparison with rural areas the facilities available in tribal areas are very limited. It is not good for an economy like India where nearly 70% of people are living in rural areas. The main scope of these rural people is the public healthcare sector as most of the rural people are poor and marginalised. It is utmost important to have equality and accessibility in the provision of healthcare services to all irrespective caste, religion, age, sex, areas and status. It is also a prerequisite to have a strong public healthcare sector to make the people healthy. Unfortunately it is weakening in India in spite of the support of governments, both at the Centre or at the state. Before Narendra Modi taking charge as the Prime Minister of India, the Congress party was in power. Modi took charge as the PM of India on the 26th of May 2014 and his first regime ended on the 29thof May 2019. Hence, it is utmost important to researchers to highlight the changes made in the public healthcare infrastructure in rural and tribal areas between 2014 and 2019.

Review of Literature

Review of literature is very necessary to know the different concepts related to the topic as well as to get proper direction to the present study. A few studies relating to the working of the public healthcare sector are reviewed here.

Mohanty (2020) asserts that in India the public spending on healthcare is only 1.13% of the GDP and the shortage of healthcare workers, particularly nurses and midwives, is huge. The ratio is 0.6 nurses per doctor, which is very much lower than the WHO norm of three nurses per doctor.

According to Yellappa (2020) in India, the nurse-population ratio is very low, 1.7:1,000 while the WHO norm is 3 nurses per 1,000 people.

Ghosh (2017) highlights that in India government's health spending is very limited while in many countries it is very high. For example in the UK, government's health spending is almost 90% while it is less than 30% in India.

Kirtane (2017) points out that though the Draft Health Policy 2015 proposes 2.5% of GDP for the public healthcare system in reality it decreased in all years It was upheld by Sundaram et al (2016), Baru et al (2010); Banerjee et al (2004).

Sundararaman et al (2016) report that the growth of the central government's spending in real terms on public health between 2004-'05 and 2009-'10 was 13.65 per cent, but it plummeted to 0.31 per cent between 2010-'11 and 2014-'15, a sharp decline in public health expenditure in real terms. The actual expenditure in 2014-'15 was lower than the expenditure in 2011-'12. All these have immediate adverse effect on the availability and quality of public healthcare services. This view was supported by Meeta and Rajivlochan (2010); Kanmony in Kanmony (Eds.) (2009); Nagulapalli (2014).

Nagpal (2014) reveals that out-of-pocket spending is one of the important reasons for impoverishment in India. The public spending on health is just hovering around one per cent. The out-of-pocket spending was about 70% in 2005 and this is one of the highest percentages in the world. In 2011, the out-of-pocket spending decreased to 60%. Bansod and Sarang (2014); Reddy (2012); Prasad and Cyril in Kumar J. V et al (Eds.) (2010) uphold this view

Jackson et al (2013) say that India's health system has to be reformed. Majority of the primary health centres in India fall far short of the government's minimum standards and this is a reason for the rural people to prefer private healthcare providers.

Prasad and Raghavendra (2012) expose the fact that the government gives exemption of import duty for expensive medical equipments and it has subsidised rates for land to build hospitals to the private healthcare providers and it provides reimbursement provision for all government employees to avail health services in corporate hospitals, while the public sector is neglected. It was up held by Chatterjee (2009); Murty in Lahiri (Eds.) (2006).

Baru et al (2010) reveal that in India, the investment made on public health sector is the lowest (19 to 20%) among the world countries. The low public investment is the main reason for not only the poor functioning and utilisation of public services but also for the impoverishment of individuals. Individuals take medical treatment in private hospitals as the quality of services in public hospitals is very poor. This view was endorsed by Rajagopal (2004); Banerjee et al (2004); Chinai and Rahul (2005). Goel (2010) points out that in India, the shortfall of male health assistants at PHCs to the extent 7169 and female to the extent of 5941 results in the poor performance of PHCs.

Preker in Prekar and John (Eds.) (2005) asserts that the incidence of spending on public services is often pro-rich and the outcome for the poor are much worse, though in principle public financing favours an equitable spending on healthcare. The public funded programmes fail to ensure access of quality healthcare services to poor people. This view was backed by Acharya and Kent (2005).

Research Gap

The review of related studies makes it clear that the public healthcare sector is in a stage of dilapidation. Almost all studies referred by the author concentrate mainly on public spending on healthcare sector, nurse-population ratio, government policies towards private hospitals and the performance of primary health centres. No study is found in focussing on the changes made in the public healthcare infrastructure between regimes. Hence this study tries to fill this gap and this study is the premier one in this aspect.

Method And Materials

This study is exploratory in nature. It tries to explore the changes effected in healthcare infrastructure in rural and tribal areas of the Indian subcontinent. This article has made use of only secondary data (second hand information), which have been collected mainly from two reports on Rural Health Statistics – 2013-'14 and 2018-'19. The researcher purposely has chosen two years, 2014 and 2019 for the present study as the period coincides with Modi's first regime. The number of states included in the 2014 report is 28 and in 2019 it is 29. The important factors analysed are: healthcare infrastructure, particularly number of SCs, PHCs and CHCs, manpower in healthcare centres, particularly health workers, health assistants, doctors and specialists, and other basic facilities such as equipment available for testing, operation theatre, and X-ray machine and the availability of water and power. Tables are used for presenting data and percentages for analyzing data.

RESULTS

Healthcare Infrastructure in Rural Areas

The most suitable factor that helps understanding the performance of a country's healthcare sector is the public healthcare infrastructure available in a country. Hence all the factors that influence the provision of healthcare services to rural mass are taken for discussion.

Healthcare Centres in Rural Areas

The details regarding the number of SCs, PHCs and CHCs and their shortfall in 2014 and 2019 are presented in the following table. The shortfall in each state is simply the difference between the minimum requirement and the centres in position. As there are shortfalls in some states and excesses in some other states the overall shortfall (Shortfall = the minimum required minus the number in position, S=R - P) given in tables is different from the actual difference. For instance, in 2014 the actual difference in the number of SCs, shortfall, between 179,240 and 152,326 is 26,914, but the figure in the table is 36,346. This is true in vacancy (Vacancy = sanctioned minus persons in position, S - P) calculation also.

Table 1: No. of SCs, PHCs and CHCs in rural India in 2014 & 2019

Category	As on 31 March 2014			As on 31 March 2019		
	R	P	SF	R	P	SF
SCs	179,240	152,326	36,346	189,765	157,411	43,736
PHCs	29,337	25,020	6,700	31,074	24,855	8,764
CHCs	7,322	5,363	2,350	7,756	5,335	2,865

Source: Rural Health Statistics – 2013 -'14 & 2018 -'19, MHFW, GOI.
R = Required, P = in position, SF = Shortfall.

It is easily observed from the above table that there is an increase only in the number of SCs functioning in India. It increased from 152,326 in 2014 to 157,411 in 2019. Even then the shortfall of SCs increased from 36,346 in 2014 to 43,736 in 2019. But both the strength of PHCs and CHCs decreased and so the shortfall of PHCs increased from 6,700 to 8,764 and CHCs from 2,350 to 2,865 between the two years.

Manpower

Manpower available in an institution is the prerequisite for its efficient functioning. Unless enough qualified people are in position no department can function well. As it is given every healthcare centre should have a minimum number of healthcare personnel. But in India, in most of the states, many posts are vacant and the shortfall of health professionals is large.

Healthcare Personnel

In India, in all years there is a shortfall of manpower basically required for the well-functioning of the public healthcare sector. In India, there were 8,720 vacancies for doctors and the shortfall of doctors in PHCs was 2,912 in 2014. The figures for 2019 are 7,715 and 1,484. As far as specialists are concerned, there were 7,668 vacancies and 17,371 shortfalls in 2014. As on 31.03.2019, the respective numbers are 9,147 and 17,459. All these details are presented in Table 2.

Table 2: Position of doctors in PHCs & specialists in CHCs in 2014 & in 2019

Category	2014					2019				
	R	S.	P	V	SF	R.	S	P	V	SF
Doctor	25020	33,666	27355	8720	2912	24855	32824	29799	7715	1484
Specialist	21452	11463	4091	7668	17371	21340	12597	3881	9147	17459

Source: Rural Health Statistics - 2013 –'14 & 2018 -'19, MHFW, GOI.
R. = Required, S = Sanctioned, P. = in position, V = Vacant, SF = Shortfall.

The shortfall of specialists and their vacancies have to be classified as their position in CHCs is very important. In CHCs, there should be four types of specialists, surgeons, obstetricians & gynaecologists, physicians and paediatricians. In India, all the four types of specialist are in shortage and many sanctioned posts are not filled in. Vacancies for surgeon increased from 2,430 in 2014 to 2,572 in 2019. For physicians the number of vacancies increased from 1,782 to 2,190. Vacancies for paediatricians increased from 1,507 in 2014 to 2,255 in 2019. But vacancies only for gynaecologists decreased from 2,236 to 2,135. There is also

an increase in the shortage of surgeons and physicians; surgeons increased from 4.427 in 2014 to 4,567 and physicians from 4,432 to 4,652. However the shortfall of gynaecologists decreased from 4,106 to 4,002 and of paediatricians from 4,407 in 2014 to 4,264 in 2019.

The shortfall of health workers is an indication of the poor performance of the healthcare institutions. The table given below shows the shortfall of health workers in SCs and health assistants in PHCs. It is obvious from the following table that there is a shortfall of (ANM)/HW(F) to the extent of 2,095 in 2014. But it increased to 4,424 in 2019. The shortfall of HW(M) increased from 96,896 in 2014 to 98,063 in 2019. The same is true for vacancies for HA(M) in PHCs also. The number of vacancies for HA(M) increased from 9,889 in 2014 to 10,839 in 2019. But both the shortfall and vacancies for HA(F) in PHCs decreased in between the two years.

Table 3: Health workers & assistants in different centres in 2014 & 2019

Year	HW(F)/ANM & HA(F)					HW(M) & HA(M)				
2014	**R.**	**S**	**P.**	**V**	**SF**	**R.**	**S**	**P**	**V**	**SF**
SC	1523 26	171 630	193 593	1449 2	2095	1523 26	9067 9	5544 5	3672 0	9689 6
PHC	2502 0	231 13	136 43	9590	1245 5	2502 0	1991 0	1035 8	9889	1638 4
2019										
SC	1574 11	183 936	205 228	1390 9	4424	1574 11	8285 7	5634 8	2942 1	9806 3
PHC	2485 5	207 12	137 86	7442	1190 6	2485 5	2367 9	1344 6	1083 9	1486 5

Source: Rural Health Statistics – 2013 –'14 & 2018 -'19, MHFW, GOI. R. = Required,

P. = in position, V = Vacant, SF = shortfall.

The details regarding the number of SCs without HW(F), without HW(M) and without both HW(F) and HW(M), and PHCs and CHCs without doctors, technicians and pharmacists are available in Table 4.

Table 4: SCs without health workers & PHCs without doctors & technicians in 2014 & 2019

Year	SCs without			PHCs without		
	HW(F).	HW(M).	Both	Dr	Lab Tec	Pharm
2014	7335	72742	4935	2225	9825	5739
2019	13773	81007	5757	1598	6378	3971

Source: Rural Health Statistics - 2013 –'14 & 2018-'19, MHFW, GOI.

Dr =Doctor, Lab Tec = Lab Technician, Pharm = Pharmacist

It is clear from the above table that the number of SCs without HW(F) increased from 7,335 in 2014 to 13,773 in 2019 and HW(M) from 72,742 to 81,007. The number of SCs without both HW(F) and HW(M) increased from 4,935 in 2014 to 5,757 in 2019.There were 2,225 PHCs without any doctor, there were 9,825 PHCs without any lab technician and 5,739 PHCs without any pharmacist in 2014. In 2019, there are 1,598 PHCs without doctors, 6,378 PHCs without lab technicians and 3,971 without pharmacists, a small positive change.

The most important factor in affecting the performance of the healthcare sector in a country is the vacancies for and the shortfall of nursing staff in healthcare centres. There were 12,956 shortfalls of and 11,338 vacancies for nursing staff in PHCs and CHCs functioning in 2014. The shortfall decreased to 9,778 while the number of vacancies increased to 13,462 in 2019. The shortfall of and vacancies for nursing staff in PHCs and CHCs are presented in Table 5.

Table 5: Nursing staff in PHCs and CHCs in 2014 & 2019

Centres	Nursing Staff									
	2014*					2019				
	R	S	P	V	SF	R	S	P	V	SF
PHCs	62561	71321	63938	11338	12956	2485 5	2947 6	3007 1	6126	5800
CHCs						3734 5	3932 5	5090 5	7336	3978

Source: Rural Health Statistics - 2013 –'14 & 2018-'19, MHFW, GOI.* = for 2014 figures are for both PHCs & CHCs. R. = Required, S = Sanctioned, P = in position, V = Vacant, SF = Shortfall.

From table 6, it is clear that there are vacancies for and shortfall of all types of technical post. In 2019 in comparison with the year 2014, both the shortfall of and vacancies for all types of technical post have decreased. However there is a huge difference between the minimum requirement and technicians in position even in 2019, as much as 13,243. It is a symptom of ill-health in the public healthcare system.

Table – 6: Technicians in PHCs and CHCs in 2014 & 2019

Year	2014					2019				
Category	R.	S	P.	V	SF	R.	S	P	V	SF
Radio*	5363	4031	2189	19291	3410	5335	3813	2419	15548	3148
Pharm	303838	274224	22689	52557	8536	3019 0	2786 7	2620 4	4591 1	7581
Lab Tec	303838	213390	16679	57244	13897	3019 0	2073 7	1871 5	5089	1324 3

Source: Rural Health Statistics - 2013 –'14 & 2018 -'19, MHFW, GOI.

Radio* = Radiographers in CHCs only, Pharm = Pharmacists, Tec = Technicians, R. = Required,

S = Sanctioned, P. = in position, V = Vacant, SF = Shortfall.

Other Facilities Available

For well-functioning of healthcare centres it is a prerequisite to have facilities such as operation theatre (OT), labour room (LR) and referral transport (RT). Regular water supply and power supply and all-weather approach roads are very important even for good functioning of ordinary departments/offices. But all these are also very limited in healthcare centres functioning in rural areas. The pertaining details are given in Table 7.

Table 7: SCs & PHCs without basic facilities in 2014 & 2019

	SCs without			PHCs without						
Year	RW	E	R	LR	OT	RT	4 B	RW	E	R
2014	44259	39500	17888	7770	15843	14678	6916	1886	1260	2030
2019	28309	39286	17151	12876	15482	15482	12095	1358	795	1355

Source: Rural Health Statistics - 2013 –'14, MHFW, GOI, RW =Regular Water Supply

E = Electricity, R = without All-weather Approach Road, LR = Labour Room
OT = Operation Theatre, RT = Referral Transport, 4B = At least 4 Beds,.

The availability of water and power and approach roads in SCs increased much in 2019 compared with 2014. However, even in 2019 there are 39,286 SCs without electricity, 28,309 SCs without regular water supply and 17,151 SCs without any all-weather approach road. In the same way the number of PHCs without water, electricity and approach road also decreased. But the number of PHCs without labour room increased from 7,770 in 2014 to 12,876 in 2019, without operation theatre from 15,843 to 18,791, without referral transport from 14,678 to 15,482 and without four beds from 6,916 to 12,095. In other words, PHCs with LR decreased from 17,250 in 2014 to 11,979 in 2019 and PHCs with OT decreased from 9,177 in 2014 to 6,064 in 2019. PHCs with RT also decreased from 10,342 in 2014 to 9,373 in 2019. The same is true in having at least four beds; it decreased from 18,104 to 12,760.

It is very sad to note that the total number of CHCs with all the four types of specialist decreased from 824 in 2014 to 378 in 2019 out of 5,335 CHCs in position. Hence the total number of CHCs without four specialists increased from 4,529 in 2014 to 4,957 in 2019. However other facilities increased but not significantly except in having new born care corner (NBCC). The availability of NBCC in CHCs, increased from 4,210 in 2014 to 4,639 in 2019 and so the number of CHCs without NBCC decreased considerably, from 1,153 to 692. The pertaining details are presented in Table 8.

Table 8: CHCs without specialists and basic facilities in 2014 & 2019

STATE	CHCS without						
	4Sps	OT	LR.	Lab.	NBCC	30B	X-R
2014	4529	954	419	356	1153	1472	2680
2019	4957	882	283	202	692	1125	2412

Source: Rural Health Statistics - 2013 –'14 & 2018-'19 MHFW, GOI, 4Sps = Four Specialists,

LR = Labour Room, OT = Operation Theatre, Lab = Laboratory, NCB = New Born Care,
30B = At least 30 Beds, X-R = X-ray Machine.

It is highly deplorable to note that even in 2019 (no data for 2014) there are many healthcare centres without toilets for male and female patients and for staff. Out of the 157,411 SCs in position only in 70,100 SCs there are toilets for staff and 43,094 for patients. Only in 16,220 PHCs there are toilets for patients and 15,089 for staff. In CHCs, only 3,957 have toilets for staff and 4,105 for patients.

Healthcare in Tribal/Hilly Areas

In tribal areas the public healthcare facilities available are very meagre in comparison with the urban and rural areas due to many reasons. The main reason is finance that is needed for establishing healthcare centres in these areas. There is no road facility, people are widely scattered and they are following their own traditional methods of treatment and so on. However it is the duty of the government to establish enough healthcare centres in all areas including tribal areas. It is very clear from the table given below that the number of SCs, PHCs and CHCs increased in hilly areas during the period under study. However in comparison with the requirement, the healthcare centres in position are very limited.

Table 9: No. of SCs, PHCs and CHCs in tribal areas in 2014 & 2019

Category	As on 31 March 2014			As on 31 March 2019		
	R	P	SF	R	P	SF
SCs	31258	26949	7646	32433	28682	7054
PHCs	4677	3895	1323	4853	4211	1204
CHCs	1157	979	323	1202	1022	326

Source: Rural Health Statistics - 2013-'14 & 2018-'19 MHFW, GOI. R = Required, P = in position, SF = Shortfall.

From the above table it is easy to understand that in a period of five long years, the shortfall of SCs decreased only by 592, from 7,646 in 2014 to 7,054 in 2019. The shortfall of PHCs decreased from 1,323 to 1,204. But the shortfall of CHCs increased from 323 in 2014 to 326 in 2019.

Man Power

The availability of healthcare persons such as doctors, health workers, health assistants and nursing staff and specialists is another factor to determine the status of public healthcare sector. There were 1,466 vacancies for doctors in PHCs and 1,570 for specialists in CHCs in 2014. The respective figures are 1,374 and 2,315 in 2019. While the shortfall of doctors in PHCs decreased from 701 in 2014 to 442 in 2019 the shortfall of specialists in CHCs increased from 3,316 to 3,560. All these details are given in Table 10.

Table 10: Doctors in PHCs & specialists in CHCs in tribal areas in 2014 & 2019

Category	2014					2019				
	R	S.	P.	V	SF	R.	S	P	V	SF
Doctor	3895	5177	4218	1466	701	4211	5265	4469	1374	442
Specialist	3916	2149	600	1570	3316	4088	2774	528	2315	3560

Source: Rural Health Statistics 2013 –14 & 2018-19, MHFW, GOI.R. = Required, S = Sanctioned,
P. = in position, V=Vacant, SF = Shortfall.

The four categories of specialist in position are very

limited in both the years. The shortfall of surgeons increased from 833 in 2014 to 943 in 2019. The shortfall of obstetricians increased from 795 to 824, physicians from 854 to 911 and paediatricians from 834 to 880. Like the shortfall, vacancies for surgeons increased from 397 to 532, for physicians from 384 to 522 and for paediatricians from 361 to 850. Only for obstetricians vacancy decreased from 427 to 414.

For the good functioning of healthcare sector every centre should be manned in enough number. There are vacancies as well as shortfalls for the posts of HW(F) and HW(M). The overall vacancies for HW(M) increased from 5,751 in 2014 to 6,912 in 2019. The shortfall of HW(M) increased from 15,714 in 2014 to 16,136 in 2019. The shortfall of HA(M) in PHCs also increased from 2,606 in 2014 to 2,228 in 2019. Vacancies for ANM/HW(F) also increased from 3,124 in 2014 to 3,821 in 2019 and HA(F) in PHCs from 647 to 1,139. The shortfall of HA(F) in PHCs increased from 1,833 to 1,900. There is a decrease only in the shortfall of HW(F), from 1,219 to 1,104. Details regarding vacancy and shortfall of HWs at SCs and HAs at PHCs are portrayed in Table 11.

Table 11: Health workers & health assistants in position in tribal areas in 2014 & 2019

Year	HW(F)/ANM/ HA(F)					HW/HA(M)				
2014	**R.**	**S**	**P.**	**V**	**SF**	**R.**	**S**	**P**	**V**	**SF**
SC	26949	32500	35600	31241	12199	26949	17534	12380	5751	15714
PHC	3895	2693	1942	647	1833	3895	1931	1679	626	2606
2019										
SC	28682	36958	40947	38211	11044	28682	16979	11627	6912	16136
PHC	4211	3631	6712	1139	1900	4211	3015	5301	748	2228

Source: Rural Health Statistics - 2013 –'14 & 2018-'19, MHFW, GOI,R. = Required, P. = in position,
V = Vacant, SF = Shortfall

The vacancy for nursing staff was 2,018 and the shortfall was 3,899 in 2014. For the year 2019 separate data for PHCs and CHCs are given to facilitate a comparative analysis. The total number of vacancy increased to 2,270 in 2019 while the shortfall decreased to 2,034 in 2019. Details pertaining to these are available in Table 12.

Table 12: Nursing staff in PHCs and CHCs in tribal areas in 2014 & 2019

Centre	Nursing Staff									
	2014*					2019				
	R	**S**	**P**	**V**	**SF**	**R**	**S**	**P**	**V**	**SF**
PHCs	107	90	88	20	38	4211	5320	5706	1397	739
CHCs	4848	9842	4218		99	7154	6604	7161	873	1295

Source: Rural Health Statistics - 2013 –'14,& 2018-'19, MHFW, GOI,* = for both PHCs & CHCs,
R. = Required, S = Sanctioned, P. = in position, V = Vacant, SF = Shortfall.

The next factor that analysed here is the status of technicians in PHCs and CHCs. While the number of vacancies for radiographers decreased from 331 to 301 and for pharmacists, from 1,315 to 740, vacancies for lab technicians increased from 812 to 952. The shortfall of radiographers increased from 605 to 619. But the shortfall of pharmacists decreased from 1,807 to 1,104 and of lab technicians from 2,279 in 2014 to 2,088 in 2019.

As there is no detail regarding other facilities existing in healthcare centres functioning in hilly areas, no table regarding them is included for further discussion.

DISCUSSION

There is an increase in the number of sub-centres, primary health centres and community health centres functioning in India in comparison with the early 21st century. (As on 31st March 2005, there were only 146,026 SCs, 23,236 PHCs and 3,346 CHCs [GOI, RHS 2004-'05]). Their respective numbers in 2019 are: 157,411, 24,855 and 5,335. However, in comparison with 2014, in rural areas only the strength of SCs increased by 5,085 in 2019 while the strength of PHCs decreased by 165 and CHCs by 28 in 2019. As there is a fall in the availability of healthcare centres the average population covered by a centre is more than the norm prescribed by the IPHS. On an average, an SC covered 5,616 persons, a PHC, 35,567 persons and a CHC, 165,702 persons even in 2019 against 5,473 persons by an SC, 33,323 by a PHC and 155,463 by a CHC in 2014. It means that in 2019, an SC serves 112.32% of its capacity. A PHC serves 18.06% and a CHC serves 38.09% more than their respective capacity.

Another lacuna in the functioning of public healthcare sector is the availability of doctors in PHCs and specialists in CHCs. The shortfall of doctors decreased from 2,912 in 2014 to 1,484 in 2019 and so the number of PHCs functioning without a doctor decreased from 2,225 to 1,598. The vacancy has also decreased from 8,720 in 2014 to 7,715 in 2019. It is disheartening to note that there is no specialist in many CHCs in both the years. The overall shortfall is more than 80% in both the years, 81.8% in 2019 against 80.98 in 2014. Further, all the four types of specialist are in shortfall and many sanctioned posts are not filled in. The shortfall of surgeons is estimated at 85.6%, obstetricians & gynaecologists at 75%, physicians at 87.2% and paediatricians at 79.9% in 2019 against the shortfall of surgeons at 82.55%, obstetricians & gynaecologists at 75.7%, physicians at 82.64% and paediatricians at 82.17% in 2014. In comparison with 2014 the shortfall of surgeons (85.6%) and physicians (87.2%) is more, but for others it is less in 2019.

It is also very pathetic to note that even the sanctioned posts for health workers in SCs and health assistants in PHCs have not been filled in. There were 14,492 vacancies (9.51%) for HW(F) in SCs and 9,590 vacancies (38.33%) for HA(F) in PHCs in 2014. The respective figures for 2019 are: 13,909 (8.84%) and 7,442 (29.94%). The vacancies for HW(M) were 36,720 (24.11%) in SCs and 9,889 (39.52%) for HA(M) in PHCs in 2014. In 2019, the respective numbers are 29,421(18.69%) and 10,839 (43.61%). It means that the total number of vacancies for HA(M) increased and for others it decreased. In 2014, the number of SCs without HW(F) 7,335 (4.82%), without HW(M) was 72,742 (47.75%), and without both HW(F) and HW(M) was 4,935 (3.24%). In 2019, the respective numbers are13,773 (8.75%), 81,007 (51.46%) and 5,757 (3.66%). Vacancies for nursing staff in PHCs and CHCs in 2014 were 11,338 (18.12%) and the shortfall was 12,956 (20.71%). In 2019, there are 13,462 (21.64%) vacancies for and

9,778 (15.72%) shortfalls of nursing staff. It means that percentage of vacancies for nursing staff increased from 18.12% to 21.64% while the shortfall decreased from 20.71% from 15.72% between 2014 and 2019.

In both the years, there are also vacancies and shortfall for all types of technical post. There were 1,929 (35.97%) vacancies for and 3,410 (63.58%) shortfalls of radiographers in 2014. Vacancies for radiographers go down and reached 1,548 (29.02%) and shortfalls reached 3,148 (59.01%) in 2019. For pharmacists, vacancies decreased from 5,257 (18.85%) in 2014 to 4,591 (15.21%) in 2019. For the shortfall of pharmacists also the nation experienced a decline, from 8,536 (28.09%) in 2014 to 7,581 (25.11%) in 2019. For lab technicians, vacancies decreased from 5,724 (18.84%) in 2014 to 5,089 (16.86) in 2019 and the shortfall from 13,897 (45.74%) to 13,243 (43.87%).

In the availability of facilities such as labour room (LR), operation theatre (OT) and referral transport (RT) in PHCs the country experienced negative changes. The number of PHCs without LR increased from 7,770 in 2014 to 12,876 in 2019. The number of PHCs without OT has also increased from 15,843 to 18,791. PHCs without RT increased from 14,678 to 15,482. The number is very high for PHCs without at least four beds, increased from 6,916 to 12,095. In CHCs also, it is a prerequisite to have all specialists and other facilities such as LR, OT, laboratory, new born care corner (NBCC), at least 30 beds and X- ray machine. The number of CHCs with all the four specialists was only 824 (15.36%) out of 5,363 in 2014. But it decreased further to 378 (7.09%) out of 5,335 in 2019. While CHCs without OT (from 954 to 882), LR (from 419 to 283), laboratory (from 356 to 202), NBCC (from 1,153 to 692), 30B (from 1,472 to 1,125) and X-ray machine (from 2,680 to 2,412) decreased CHCs without 4 specialists (from 4,529 to 4,957) increased.

The number of SCs with regular water supply saw a big rise in 2019 in comparison with 2014; the number of SCs without regular water supply decreased from 44,259 in 2014 to 28,309 in 2019. SCs without electricity and all weather approach road experienced an insignificant downfall. SCs without power supply decreased from 39,500 in 2014 to 39,286. In the same way the number of SCs without approach road also decreased from 17,888 in 2014 to 17,151 in 2019, provided road facility only to 737 SCs in five long years. PHCs without regular water supply also decreased from 1,886 (7.54%) in 2014 to 1,358 (5.46%) in 2019. PHCs without power supply decreased from 1,260 (5.04%) to 795 (3.2%) and PHCs without all-weather approach road show a decrease from 2,030 (8.11%) to 1,355 (5.45%). It is deplorable to note that there are many centres without separate toilets for male and female patients and for staff even in 2019 (No detail information is available for 2014). Out of 157,411 SCs functioning in India, only 43,094 (27.38%) SCs have separate toilets for male and female patients. It is a little bit more for staff working there, only 70,100 (44.53%). Out of 24,855 PHCs functioning, only 16,220 (65.26%) PHCs have separate toilets for male and female patients and only 15,089 (60.71%) have toilets for staff. Toilets are available separately for male and female patients only in 4,105 (76.94%) and staff toilets only in 3,957 (74.17%) out of 5335 CHCs functioning.

In Tribal areas, only the strength of healthcare centres increased; the number of SCs increased in five years by 1,733 (26,949 in 2014 and 28,682 in 2019), PHCs by 316 (3,895 in 2014 and 4,211 in 2019) and CHCs by 43 (979 in 2014 and 1022 in 2019). In relative term their respective rates are: 6.43%, 8.11% and 4.39%. However in comparison with the requirement, the centres in position are very low. For instance, the number of SCs in position is just 86.21% (a shortfall of 7,054 against the minimum requirement of 28,682). Hence the number of persons served by an SC is very high, 3,394, 13.13% higher than the IPHS norm of 3,000. It is 15.56% (23,115) higher than the norm (20,000) in the number of persons served by a PHC and 19.05% (95,243) higher than the norm of 80,000 in the case of CHC.

As on 31st March 2019, in tribal areas the shortfall of doctors is 10.50% in PHCs against 18.0% in 2014. The percentage of vacancy for doctors in PHCs is 37.64% in 2014 and 32.63% in 2019. However, the shortfall of specialists is as much as 87.08% in CHCs in 2019. In 2014, it was only 84.68%. The number of surgeons in position decreased from 146 in 2014 to 79 in 2019, a vacancy of 532 and a shortfall of 943 against the minimum requirement of 1,022 in 2019. In relative term, the vacancy of surgeons is 73.65% in 2014 and 88.52% in 2019 and the shortfall is 81.21% in 2014 and 92.27% in 2019. The shortfall of and vacancy for physicians increased, the shortfall from 854 to 911 and the vacancy from 384 to 522. The overall shortfall of paediatricians increased from 834 to 880 and the number of vacancy from 361 to 850.

There are also vacancies for as well as shortfalls of HW(F) and HW(M) in tribal areas. The number of vacancies for HW(F) in SCs increased from 3,124 (11.59 %) in 2014 to 3,821 (13.32%) in 2019. But the overall shortfall decreased from 1,219 in 2014 to 1,104 in 2019. The vacancy rate for HW(M) was 21.34% (5,751) in 2014 and it increased to 24.10% (6,912) in 2019. On the other hand, the shortfall of HW(F) decreased from 4.52% (1,219) in 2014 to 3.85% (1,104) in 2019. For the shortfall of HW(M), it decreased from 58.31% (15,714) in 2014 to 56.26% (16,136) in 2019. On the other hand the vacancy for HA(M) in PHCs increased from 16.07% (626) to 17.76% (748). In 2014, the shortfall for HA (M) was 66.91% (2,606). But it decreased to 52.91% (2,228) in 2019. But, vacancies for HA (F) in PHCs increased from 647 (16.61%) in 2014 to 1,139 (27.05%) in 2019.

Data available for nursing staff requirements of PHCs and CHCs in tribal areas show that the number of vacancy was 2,018 (18.78%) and shortfall was 3,899 (36.28%) in 2014 against the vacancy of 2,270 (19.97%) and the shortfall of 2,034 (20.27%) in 2019. It means that the number of vacancy for nursing staff increased while the overall shortfall decreased between the two periods taken up for the study. For the post of radiographers, the number of vacancies decreased from 331 to 301 and for pharmacists from 1,315 to 740. But for lab technicians it increased from 812 to 952. As far as the overall shortfall of radiographers is concerned it increased from 605 to 619. For pharmacists, the shortfall decreased from 1,807 to 1,104 and of lab technicians decreased from 2,279 in 2014 to 2,088 in 2019.

From the discussion carried out it is clear that the present study also supports the view of earlier researchers that the public healthcare sector is in a stage of dilapidation and the healthcare facilities available are very limited and so the quality of services in public hospitals is very poor.

The Summary Of Findings

- In rural areas, in comparison with 2014, only the strength of SCs increased while the strength of PHCs and CHCs decreased.
- The overall shortfall of SCs is 23.05%, PHCs 28.2% and CHCs 36.94% in 2019. The respective rates are only 20.28%, 22.84% and 32.1% in 2014.

- As the number of SCs, PHCs and CHCs is less than the minimum required the number of persons served by each healthcare centre increased; a SC by 143, a PHC by 2,244 and a CHC by 10,239 between 2014 and 2019.
- Both the shortfall of and vacancy for doctors in PHCs decreased from 2014 to 2019. However the overall shortfall of specialists and CHCs without specialist increased. In many states, there is no specialist in many CHCs in both the years.
- The shortfall of surgeons (85.6%) and physicians (87.2%) is more in 2019 than in 2014, while that of obstetrician or gynaecologist is less.
- In various states even the sanctioned posts for health workers in SCs and health assistants in PHCs have not been filled in. Hence the total number of vacancies for HA (M) and the shortfall of HW (F) and the number of SCs without HW(F), HW(M) and both HW(F) & HW(M) increased very much.
- While vacancies for nursing staff in PHCs and CHCs increased the shortfall decreased in between 2014 and 2019. In both the years, there are also vacancies for and shortfall of radiographers, pharmacists and lab technicians though their number decreased.
- In the availability of facilities such as labour room (LR), operation theatre (OT), referral transport (RT) and at least 4 beds in PHCs the country experienced a negative change.
- CHCs having all specialists decreased while CHCs with other facilities such as LR, OT, laboratory, NBCC, at least 30 beds and X- ray machine saw a small increase.
- Though the number of SCs and PHCs without regular water supply, without electricity and all weather approach road decreased to a certain extent there are thousands of SCs and PHCs without these facilities even in 2019.
- There are many SCs, PHCs and CHCs without toilet both for patients and staff.
- In Tribal areas, only the strength of all the healthcare centres increased between 2014 and 2019. However the healthcare centres in position are very low in comparison with the requirement.
- The number of persons served by a healthcare centre in tribal areas is much higher than the IPHS norm.
- Though the shortfall of doctors decreased in PHCs the shortfall of specialists increased in CHCs in 2019. All the four categories of specialists in position are very limited in comparison with the requirement.
- In tribal areas, the percentage of vacancies for HW(F) and HW(M) in SCs increased between 2014 and 2019.
- The vacancy rate for nursing staff from 18.78% to 19.97% while the shortfall decreased from 36.28%) in 2014 to 20.27% in 2019.
- There is mixed trend for both the vacancy for and the shortfall of technicians.

Conclusion

It can easily inferred from the above discussion that, in comparison with 2014, in 2019 there is an improvement in rural areas in the number of SCs in position, the number of SCs and PHCs with regular water supply, power supply and approach road. However, as the overall shortfall of SCs, PHCs, and CHCs increased the average rural population covered by a healthcare centre increased between 2014 and 2019. While there is a decrease in the number of PHCs without doctor the number of CHCs functioning without specialists increased. The number of SCs without health workers increased. There is also a rise in the shortfall in other facilities such as operation theatre, labour room and referral transport. It is almost true to tribal/hilly areas also. All these mean that the healthcare infrastructure and manpower position and other facilities available, in general, experienced a negative change. In reality, it is not a good sign of development. As time passes and economic condition improves, healthcare infrastructure of a country must be strengthened. Instead of it, in India, it has weakened in Modi 1.0 regime.

Policy Implications

A strong public healthcare is very much necessary to protect all people, particularly the poor rural and tribal people from their ill health. If the concerned authorities take a few steps including the following the ailing healthcare sector will experience a healthy future.

- ✓ The reasons for the deplorable condition of our healthcare sector are many. However, the main reason is that in India, the public health spending is very low. It is necessary to raise the budget allotment for this sector to 2.5% of the GDP from the present allotment of around 1%.
- ✓ The shortfall in healthcare infrastructure including healthcare centres and manpower should be removed and vacancies of all posts should be filled.
- ✓ The doctor-population ratio should be improved. The WHO specification for doctor-population ratio is that there should be one doctor for every 1,000 persons. But in India as on 4th July 2019, there is only one doctor for 1,457 persons. The ratio is as high as 28,391 in Bihar and 19,962 in Uttar Pradesh. It is necessary to serve 11,082 people by an allopathic government doctor (http/www/Doctor-population ratio).
- ✓ More healthcare workers should be appointed to remove both the shortfall of and vacancy for them.
- ✓ More nursing staff should be appointed to raise the nurse-population ratio to the WHO norm of 3 nurses per 1,000 people. In India, it is only 1.7:1,000.
- ✓ Other facilities such as operation theatre, labour room, and new-born care corner in enough number with all facilities should also be established.

To ensure equal and equitable availability of healthcare services in rural and tribal areas the above mentioned measures will help governments, both the centre and states.

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