International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Health Care Infrastructure in Uttar Pradesh: Need for Reallocation and Regulation

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ABSTRACT:
Undoubtedly, there are many improvements needed in the Uttar Pradesh health care system as compared to most other states because as per health parameters defined by the World Health Organization, India performs poorly. The World Health Organization reported that India's rank out of 194 countries in the world was 145th. According to estimates by the NITI Ayogo, India needs an additional 6 lakh doctors, 20 lakh nurses, and 2 lakh dental surgeons. Although WHO recommends one doctor for every 1000 patients but in case of rural India, the ratio stands at 1:11082 while in Bihar it is very low, i.e., 1:28391, and in UP it is even lower, i.e., 1:19962 (NHP 2018). Out of the 1.14 million registered doctors of modern medicine (allopathy), 80% of them are practicing in urban places which account for only 31% of the total Uttar Pradesh population. Similarly, other health infrastructures like Primary Health Centers (PHC's), Community Health Centers (CHC's), District Hospitals, and other hospitals face similar problems. The purpose of this study is to discuss and analyse these discrepancies in the health care infrastructure of Uttar Pradesh along with their status in both urban and rural parts of Uttar Pradesh.

Keywords: Health, Health Care, Health Care Infrastructure, India, Doctor-Patient Ratio, WHO

Introduction

Any state cannot develop without happy and healthy population. Happy and healthy population are the real wealth of any state. It's needless to say that the sick, ill, addicted, and unhealthy population becomes the liability for the country, as their maintenance costs a significant amount from the GDP of the country. In the context of World Development Report, 1993 (WB, 1993) states "Health improvements raise productivity in four ways: they reduce production losses due to worker sickness, they allow access to natural resources that have previously been unavailable due to disease conditions, they allow greater enrolment in schooling and improved performance in school; and they free other productive resources from disease treatment responsibilities."

The benefits of the economy are higher for the poor, who incur huge expenditures and suffer from their poor health and unproductive days. In addition to that, they spend a lot to cure themselves from the diseases. For instance, According to HT's estimates, it has been found that in India 62.6% of the expenditure on healthcare comes from the pocket expense of the common people while the government expenditure is only 1.4% (Sharma N. C., 2019) of GDP which is less than the world average of 6%. Government spending on healthcare is only Rs. 1,112 per head, which translates into just Rs. 3 per day per person in India for healthcare. (NHP, 2018) As compared to other countries such as Bhutan, Sri Lanka, and Nepal, India has allocated only 2.5%, 1.6%, and 1.1% of GDP on health care respectively. Because

of lack of healthcare facilities, more than 10 lakh people die prematurely (DJ, 2018). 7% of the population falls below the poverty line every year because of health care expenditures. (Khandheria, 2018) However, before discussing about the health care infrastructure in India, it is important to understand what is meant by health or health care.

Improvements in the health care system infrastructure of Indi by concentrating on the workforce competence and capabilities, information and data management, and institutional capability this scholars recommend the Indian government adopt an integrated strategy with a decentralized model that is centered at the district level, with assistance from the locals and local organizations such as panchayats.

Pradeep Kr. Chaudhary (choudhury, 2018) in his research paper raises issues related to private sector participation in medical education, variation in healthcare services in different regions and the availability of doctors. The study discusses the role of the private sector in medical education and uneven distribution of resources. Health is not just the absence of illness or disease but according to the World Health Organization, "health is a state of complete physical, mental, and social well-being and not merely the absence of disease." According to the Oxford Dictionary, "it is soundness of body and mind that condition in which its functions are duly and efficiently discharged." Health is seen as an asset which gives a return in the form of healthy days the same way wealth is seen as an asset which produces income. The efficiency of any person/worker is greatly influenced by the health status of that individual. Those workers who suffer from poor health status or get sick frequently will not be able to perform their duties efficiently. The productivity as well as the income of such workers will fall.

Health care is about making certain services available that help in improving the health status of people. All those activities or inputs that contribute towards improving health such as proper diet, fresh air, exercise, treatment, etc., come under health care activities. The health care delivery system refers to a balanced mix of the physical structure (buildings, etc.) and the human resources.

Review of literature:

Shailendra Kumar (Kumar S. , 2016) elaborated clearly about the failure of public healthcare services in providing health for all and the role of the private sector being encouraged and even facilitated to deliver healthcare services to the masses, but the private sector failed because it was based on profitability alone. Kumar and Gupta (Gupta, 2012) have analyzed the current situation of healthcare establishments and personnel. They suggested a health care plan which centers on planning for qualitative and quantitative improvement in India's healthcare system through building up of capabilities within the workforce, information and data management, and organizational capabilities. They suggest that the government adopt an integrated approach involving a decentralized setup wherein decisions will be made at the district level through involvement of locals and local organizations such as Panchayats.

According to Isabelle Joumard and Ankit Kumar (Kumar I. J., 2015),the health care system in India has both private and public providers and a huge scarcity of health care professionals in populous and rural states of north. They recommend that maximum improvements in health will occur through prevention. Improvement in living standards and lifestyles will have the most impact since the total sanitation campaign (Swachh Bharat Mission) is highly effective in lowering mortality rates and developmental problems during later life stages. Similarly, proper drug administration will increase health care quality and lower out-of-pocket costs.

In the same vein, Chandrakant Lahariya (Lahariya, 2018) highlights the issues related to health care services, health education services, and human resources for health in India. The study concludes that

India's extensive rural health care infrastructure has the capability to offer more health services than currently offered. However, the need is to reinforce this infrastructure by providing the appropriate combination of facilities, equipment, and human resources based on a real-time information system.
Pradeep Kr. Chaudhary (choudhury, 2018)in his article raises certain issues concerning private sector participation in medical education, differences in terms of healthcare services and number of doctors in different regions. The author discusses the impact of private sector activities on the development of medical education, the unevenness in the distribution of medical universities and quality of doctors educated in them and offers the government to solve the problem through creation of new educational establishments in disadvantaged areas.

Objectives

1. To study the current health care infrastructure in the state of Uttar Pradesh taking into account the availability of hospitals, primary health centers (PHCs), community health centers (CHCs), healthcare professionals, and health care facilities in both rural and urban areas.
2. To highlight the regional disparity in health care services among different districts of Uttar Pradesh and locate regions that lack proper medical infrastructure facilities.
3. To study the contribution made by public and private health care institutions in making available affordable and quality health care services to the residents of Uttar Pradesh.
4. To study the need for redistribution of health care resources including medical professionals, funds, medical instruments, and infrastructure for a more balanced development of the health care system in the state.
5. To make useful recommendations for regulation and policy reform in the health care sector of Uttar Pradesh.

Methodology

This study involves secondary information. In order to find out the issue of misallocation in the health care infrastructure of India, an analytical and descriptive method is being used that uses a variety of research articles, papers, and health reports published by the government of India and other organizations like WHO and the World Bank**.**

Health Care Infrastructure in Uttar Pradesh:-

Infrastructure acts as a necessary element for provision of services. Health care infrastructure in India consists of several sectors such as, public, private, traditional health sector as well as voluntary organizations. The health care infrastructure in India can be seen in Figure 1.

Table-1
Targeted Achievement Selected Health Indicator of Uttar Pradesh

Sr.No	Parameter	Value
1	Crude Birth Rate (per 1000)	19.5 Estmd
2	Crude Death Rate (per 1000)	6
3	Total Fertility Rate (15-19 age group women)	2.2
4	Maternal Mortality Rate (per 1,00,000 live births)	130
5	Infant Mortality Rate (per 1000 live births)	28

6	Under 5 Mortality Rate (per 1000 children)	50
7	Percentage of Deliveries attended by Trained Personnel	79
8	Immunization covered among children aged 12-23 months	62
9	Life Expectancy at Birth	69.1

Source: Sample Registration System (SRS)-Bulletins, 1995-2020, Office of the Registrar

Current status of above selected health indicator of Uttar Pradesh

Table-2

Sr.No	Parameter	Value
1	Crude Birth Rate (per 1000)	20.4
2	Crude Death Rate (per 1000)	6.4
3	Total Fertility Rate (15-19 age group women)	2.4
4	Maternal Mortality Rate (per 1,00,000 live births)	167
5	Infant Mortality Rate (per 1000 live births)	50.4
6	Under 5 Mortality Rate (per 1000 children)	59.8
7	Percentage of Deliveries attended by Trained Personnel	84.8
8	Immunization covered among children aged 12-23 months	69.6
9	Life Expectancy at Birth	68.1

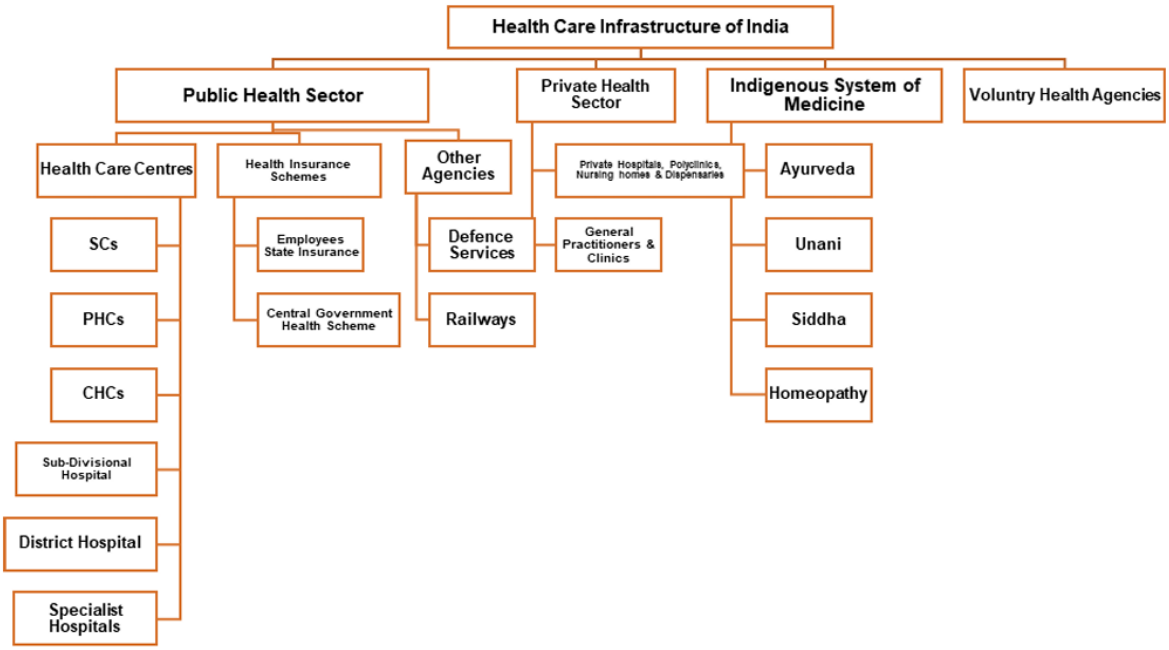
Source-NFHS-5

NFHS-5 analysis reveals that there have been positive developments in the health care sector of Uttar Pradesh; however, there still exist certain issues. The CBR is 20.4, whereas the TFR is 2.4, showing a slow increase in the population growth rate over past decades. This shows some improvement in terms of awareness regarding family planning and maternal health care facilities. The CDH rate is 6.4, which reflects good health care facilities in Uttar Pradesh. Yet, the MMR is 167 and IMR is 50.4, higher than the national average.

The figures for deliveries conducted by skilled attendants (84.8%) and immunization (69.6%) indicate some improvements in terms of progress, yet full access to healthcare remains distant. The mortality rate among under-5-year-olds is a source of worry due to problems such as nutrition, unsanitary conditions, and substandard care of infants. Life expectancy at birth is approximately 68 years.

For future improvements, it will be necessary for the state of Uttar Pradesh to ensure better infrastructural facilities for primary healthcare, increase spending on public health care, enhance facilities for rural medical care, and allocate healthcare resources more equitably. Improvements in digital health care services, increased access to education in the field of medicine, and greater oversight of private medical institutions are vital.

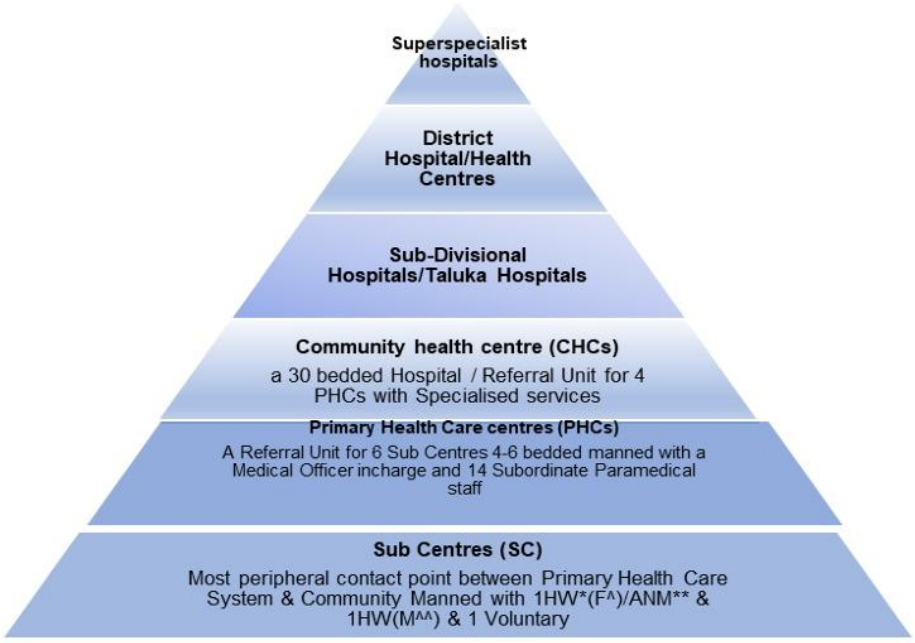
Figure 1Health Care Infrastructure in Uttar Pradesh



Public Health Sector Infrastructure:

It took more than three and a half decades of independence before India came up with its first national health policy (NHP), which was announced in 1983 (G.Sen, 2012). In that document, a comprehensive (primary health care) approach had been recommended to provide 'health for all' by establishing Sub Centers (SCs), Primary Health Centers (PHCs), Community Health Centers (CHCs), district hospitals/ civil hospitals and other medical institutions. The SC is the first contact point and the most peripheral point of interaction between primary health care service delivery system and the community. One SC covers a population of 3000 in difficult/hilly and tribal areas while 5000 in the plain area. There should be at least one female health worker/auxiliary nurse-midwife (ANM) and male health worker in each SC. Some of the activities carried out by PHC includes provision of curative, preventive, promotive and family welfare services. Above PHC is CHC, which has been set up and maintained by state governments under MNH/BMS program. In a plain area, one CHC must cover 1,20,000 populations, but 80,000 populations in difficult/hilly and tribal areas. One CHC must have 4 medical specialists namely, a surgeon, physician, Gynae and a pediatrician assisted by 21 paramedical and other staff members. It has 30 beds and one operating theatre (OT), X-ray and Labor Room. Above CHCs are SDH and District Hospitals.

Figure 2.Public Health Sector Hierarchy in India



*Health Worker, **Auxiliary nurse midwife, ^Female, ^^Male

Table 2: Health Care Infrastructure in India on March 31, 2017

Sr.No	Health Centers	Number
Hospitals	Medical Colleges and associated Hospitals	81
	Dental Colleges	40
	General Nursing Midwives Institutions	700
	Pharmacy Colleges	300
	Licensed Blood Banks	350
	District Hospitals	75
	Sub-divisional Hospitals (SDHs)	193
	Community Health Centres	1035
	Primary Health Centres	3621*
	Sub Centres	20521*
	Total Hospitals	26916*
Areas	Rural Areas	25402*
	Urban Areas	1514*
Bed Occupancy	Total beds in Rural Hospitals	125000*
	Total beds in Urban Hospitals	195000*
Human Resource Doctor	Allopathic Doctors	159000*
	Dental Surgeons	28000*
	AYUSH Doctors	95000**

Human Resource Paramedical	Pharmacists	150000*
	Nurses	310000*

*Approximately

Health Insurance Schemes:

- **The Employee State Insurance Scheme (ESIS)**: ESIS established in 1948 is based on contributory scheme between the employer and employee. The ESIS offers cash and kind benefits during sickness, maternity or employment injury.
- **The Central Government Health Scheme (CGHS):** The CGHS was established in 1954 to ensure the delivery of comprehensive medical services to central government employees, retired persons and their families residing in CGHS cities. Presently there are medical facilities in 37 cities, where there are 287 allopathic dispensary centers and 85 ayush dispensaries with 10,82,913 family health cards. (NHP, 2018)
- **Other Agencies:** In addition, the armed forces also run a separate medical organization that works under "Armed Forces Medical Services". Similarly, the railways run comprehensive health care services for the employees.
- **Private Non-Profit Sector:** The non-profit sector includes the provision of health care by voluntary organizations, non-profit organizations, missions, charities, charitable trusts and philanthropic foundations. All these organizations render their services free of cost or charge minimum cost. Poor people are major beneficiary of all such organizations providing health services at low rates.

Indigenous System of Medicine:

Apart from these, India possesses an indigenous form of medical science as well. Examples include Ayurveda, Siddha, Unani, Homeopathy, and Naturopathy. Steps have been taken by the Indian government and state governments towards formalizing and standardizing these forms of medical science. A new Ministry called 'AYUSH' has also been set up for the promotion and development of this indigenous form of medicine. AYUSH facilities in India are given in Table 3

Table 3: Registered AYUSH Practitioners in India

Sr.No	AYUSH Doctor's	Number of Doctor's
1	Ayurveda	55864
2	Homeopathy	28235
3	Unani	10152
4	Yoga & Naturopathy	1958
5	Siddha	589
	Total	106798

AYUSH has maximum number of registered Ayurveda doctors (52.44%), followed by registered homeopathy doctors (26.77%) in Uttar Pradesh

Voluntary Health Agencies:- Voluntary health agencies have an important role to play in community health programs. They collect funds and expend them depending on the requirement of the community. India has many voluntary health agencies including Indian Red Cross Society, Bharat Sevak Samaj, All

India Blind Relief Society, professional organizations such as Indian Medical Association (IMA), All India Dental Association, international organizations such as Ford Foundation, Bill & Milinda Gates Foundation, etc.

Apart from the above, Auxiliary Nurse Midwife is another agency that is very important in the provision of health care services. Auxiliary Nurse Midwives have extensive links with ASHA workers, Anganwadi workers in the ICDS program, and other development sectors including education, water supply, and sanitation. The table below shows the registered numbers of ANM, GNM, and LHV.

Table- 4
Nurses Registered in India

Sr.No	Nursing Staff	No of Registration
1	GNM (General Nurse Midwives)	139152
2	ANM (Auxiliary Nurse Midwives)	58655
3	Nursing Institutions	1546
4	Production capacity of Nursing Institutions	115242-125623

Problems with Health Care Infrastructure of Uttar Pradesh

Even with the availability of numerous hospitals, clinics, dispensaries, and health centers in the public, private, NGO, and charitable sectors, the healthcare services in Uttar Pradesh did not offer satisfactory health care to its 199.8 million population. (census 2011) New health care challenges arise in Uttar Pradesh every year due to demographic and epidemiological transitions, environmental degradation, emergence of infectious diseases, and antimicrobial resistance. The health care infrastructure in India, however, is unable to respond to these challenges because the system of delivery is not operating efficiently and is not based on the current demands of the community. The major problems of Uttar Pradesh healthcare infrastructure include:

Shortage of staff and equipment:

Despite the development of a vast network of health care infrastructure in Uttar Pradesh, the government cannot cater to the health needs of common people in a cost-efficient manner. According to the results of the rural health survey conducted by the government, only 55.6% CHCs have a working X-ray facility and 18% required specialists such as surgeons, physicians, gynaecologists, and pediatricians. (Alexender, 2018) Not only North India states suffer from a lack of health care facilities, but also suffer from a deficit of trained personnel. Four specialists are needed at each CHC in Uttar Pradesh. But of the 22,496 required specialist doctors, 4,156 are available in 5,624 CHCs in the country up till March 2017. (Lahariya, 2018) In general, there was a shortage of 86.5% surgeons; 74.1% obstetricians and gynaecologists; 84.6% general physicians; and 81% paediatricians at CHCs in the country. According to rural Health Statistics in March 2018, only 8% sub-centers, 12% PHCs, and 13% CHCs meet Indian Public Health Standards. (Alexender, 2018) Besides doctors and specialists, there is a shortfall in the other health care personnel. There was a shortfall of about 10,000 ANMs and Health workers (F) in SCs and PHCs. Of the total 31,274 PHCs and CHCs, there was a shortfall of 12,511 laboratory technicians; 7052 pharmacists; 13,194 nursing staff; and 3629 radiographers.

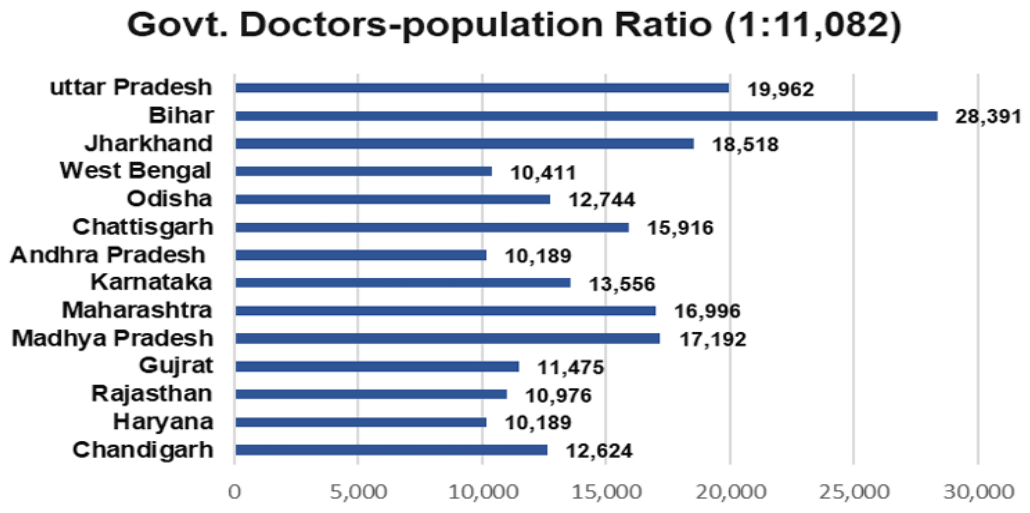
Health care infrastructure is heavily concentrated in urban areas:

Evidence show that private health care market enjoys a substantial share of hospitals, hospital beds and medical institutions which are mainly located in urban areas. The growth of the private sector has been largely urban and metro centric. (S.K.Hooda, Private sector in Health Care Delivery Market in India: Structure, Growth and Implications, 2015) As far as organized hospital care is concerned, the IMS Health survey conducted in 62 Indian cities in the year 2012 covering 14121 hospitals indicates that out of total hospitals surveyed, almost half (48%) of the large private hospitals and two-thirds of corporate hospitals are located in five million plus cities in India. Mumbai alone has 16% of all hospitals in organized healthcare. (Mukhopadhyay, 2015)

Out of total 1.14 million allopathic doctors registered with the Medical Council of India up till December 2017, around 80% practice in urban areas while 69% of rural India relies entirely on public health care where population ratio of allopathic doctor is 1:11,082 whereas the World Health Organisation recommends the ratio to be 1:1000. (Sharma S., 2018) While Delhi is well served with one government doctor per 2,203 people, Bihar is poorly served with only one doctor for 28,391. Figure 3 shows the distribution of Doctor Population ratio state-wise.

Six states i.e. Delhi, Karnataka, Kerala, Tamil Nadu, Punjab and Goa have more doctors than WHO norm of 1:1000 but most of these doctors are based in urban areas and rural areas of these states may have a shortfall of trained doctors. Besides, these doctors are least willing to serve other states which suffer from a severe shortage of trained personnel. This once again raises doubts whether more production of doctors can help resolve the situation. Moreover, due to concentration in urban areas and in posh localities, doctors have started engaging in malpractices in order to attract patients. According to Dr. Prabhakar, President of Karnataka Branch of IMA, "40% of doctors in Karnataka are in Bangalore. Rural areas still have a shortage. Bangalore is saturated even for specialists. So, they don't get jobs. Doctors' salaries are coming down… we need to focus on producing doctors for the periphery. Just producing more doctors won't not work." (Nagrajan, 2018) Around 90% of dentists and 80% of practitioners of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy (AYUSH) are also based in the private sector. Nursing personnel are relatively more evenly distributed, with half the number of nurse and midwives being in public sector.

Figure 3
State–wise Allopathic doctor- population Ratio in India



Variations in availability of health care facilities among and within the states there is huge variation in the availability of health care facilities among the states and within the states. While in certain states such as Kerala, Tamil Nadu and Delhi public health facilities play their due role as first point of care and also provide proactive services while in certain other states like Uttar Pradesh, Bihar and Jharkhand primary health facilities are missing and masses are dependent on private healthcare facilities. These states also face scarcity of doctors and nurses. Not only among the states, there is wide variation among the availability of health care facilities in within the states. As S.K.Hooda (S.K.Hooda, 2017) discovered in his study, even availability of public health facilities i.e. SCs, PHCs, CHCs, sub divisional and district hospitals per 1,00,000 population shows high disparity in provision of Public Health Facilities across Districts. While, the Private Facility is highly urban-centric covering few district of India, there is shortage of public and private health care facilities in many district and there are many part/area/ district where none is to serve people.

There is lack of any proper regulatory mechanism:
Apart from shortage of doctors in India, there are many practising doctors who are not actually medical graduates or "Jholachapp" in local parlance. As WHO reports in 2016, only one out of five practicing doctors in rural India holds valid medical degree. It stated that about 31.4 percent of those practicing as allopathic doctors had education levels below class 12, while 57.3 percent were medically unqualified (HT, 2017). Because of poor regulatory mechanisms and monitoring practices of private health facilities and doctors, they follow many unethical and greedy practices such as treating medical services as a business, earning through hospitalization and conducting unnecessary diagnostic tests and prescribing expensive medicines rather than generic ones, organ robbery or kidney racketing, charging money from poor patients and sometimes even refusing to treat them though get land from government at subsidized rates. Even more disturbing finding in the same context as noticed by Shailaja Chandra (Chandra, 2017) is that no Indian citizen whether rich or poor has any kind of protection against medical exploitation and malpractices. Medical Council of India or State Medical Councils very seldom take notice of such malpractices. That is why there is no control over the greedy practices of doctors and health facilities in India.

Recommendations:
Based on this study following recommendations can be drawn 1. Primary health Care Centres (PHC) need to be made strong as nearly 80-90% health requirements can be met from PHC which includes maternity and child care, disease prevention and immunization against them, taking care of seasonal and lifestyle diseases like flu, cold, fever, hypertension, diabetes, etc. and providing support to the aged people suffering from multiple ailments. In urban areas, Mohalla clinics can act as effective substitute while in villages strengthening of SCs and PHCs. 2. Increasing health expenditures from 1.4% (current level) to 2.5% as envisaged in NHP-2017. Since there is a problem of under-funding rather than inefficiency in health sector, government must ensure proper combination of physical and human infrastructure by increasing funding in health sector adequately. Evidence shows that public health care sector has always been deprived of any adequate funds and whenever it got adequate fund it performed exceedingly well e.g. at AIIMS, PGIMER Chandigarh, JIPMER. 3. Shortage and trained manpower in PHC and CHC could be addressed by making sure that preference should be given to local populace for posting at PHC and CHC, especially to make them ready to come back home on leave or living away from home. Skill of

ASHA, ANM and Nurses who perform better in SCs and PHCs should be further developed and then they can be transferred to PHC or CHC of their village and remote area. 4. Misallocation of medical colleges mostly in urban areas can be solved by making new medical colleges whether public or private should come up in rural and remote areas especially large populous or backward Northern states. 5. Malpractices prevailing in health sector need to be addressed by framing stringent laws and punishing all those indulging in them. Since health care services are social service and not business, any sort of commercialization and unethical practices must be stopped by all possible means. 6. By making use of technology cost can be reduced greatly as well as can improve facilities. Monitoring all services of a health centre online as well as using tele-conference, tele-medicine, tele-radiology, mobile hospital, and mobile ambulance services to provide care in remote areas. 7. Community participation is key in making any program successful. Help from community people, Panchayati Raj Institutions and educated youth of Kerala can be taken in this regard.

Conclusion:

Although, the government has done many things and has taken many initiatives in last few years and made some progress in health sector. New AIIMS and Medical Colleges have been opened. Steps have been taken to solve regional difference and ensure equitability such as government has introduced new policy of opening a medical college covering three Parliament constituencies. Tablet was provided to ANMs and ASHAs. Launching of Ayushman Bharat Scheme in which SCs and PHCs are being converted into health and wellness centres is commendable step. As in one of the objectives of this scheme, upgrading of 1,50,000 SCs and PHCs into health and Wellness Centres (HWCs) till 2022. This should be taken as an opportunity and efforts must be made to make these centres equipped with proper facility, supply and human resource so as to deliver proper service. These centers must be linked with real time information as is being tried by the National Health Resource Repository Programme which has been initiated to collect information on health facilities, service providers, and services offered at facilities available in urban area. Its scope should be widened to all health and wellness centres and their activities must be monitored regularly through online facility. Thus lot needs to be done since health is the basic right of every citizen and to fulfil this, the government needs to take an integrated approach whereby cooperation of all stakeholders i.e. public, private, NGOs, and voluntary organizations, must be sought to provide health services to everyone. Moreover, since community participation is essential for success of health programs, their active participation as well as contribution by educated youth should be secured. "Swasth Bharat" should be our motto just like "Swachh Bharat Mission".

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