

Regional Disparity in Health Infrastructure in Bulandshahr District: Block Level Analysis

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Abstract

Health is the most basic human right and its availability to all people without distinction of race, religion, and political belief, economic or social condition should be the highest priority of the government. India, in spite of attaining a successive advancement on economic front still lags behind the global standard to provide better health well-being to its people. The main reason for this highly uneven health gains in the country is because of the regional disparity in availability and accessibility in health services and health infrastructure. Health infrastructure thus is the most important tool to access the health care environment and welfare mechanism of a country. It signifies the investment priority with regards to the creation of health care facilities. Health infrastructure is the foundation to plan, deliver, evaluate and bringing about improvements in public health. The availability and accessibility of public health care services is very much dependent upon the presence of basic infrastructural facilities. The present research paper conducts research on health infrastructure and level of disparity in different blocks of Bulandshahr district of Uttar Pradesh. The data is sourced from the District Statistical Handbook of Bulandshahr District 2020-21. Different health indicators are taken out and calculated with help of Z-Score technique to get the regional disparity on health infrastructural availability at block level in Bulandshahr District. The Arc-View Software is used to get the pattern of high, medium and low availability of health infrastructure in different blocks of the district. The result shows that the urban biasness is present in the district in terms of distribution of health infrastructural facilities. Bulandshahr block, Sikandrabad block, Khurja block and Dibai blocks have better health infrastructure in comparison to other blocks of the district. The newly created Agauta Block is the most backward block in terms of having health infrastructure. Various policy measures are suggested to reduce the regional disparity in health infrastructure and improve the overall health well-being of people.

Keywords: Health infrastructure, regional disparity, Health well-being

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Introduction

"We should measure the health of our society not at its apex, but at its base." Andrew Jackson

Health is recognized as the most basic human right at national and international level. World Health Organisation (WHO) in its constitution also emphasized that 'the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition.' WHO defined 'Health' as, 'a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity' (WHO, 2006). Health is also conceptualized both as 'consumption good' and a 'capital good'. As a 'consumption good', health directly contributes to an individual's 'happiness' or 'satisfaction', and as a 'capital good', health is an important component of the value of human beings as means of production. Health is not dependent on a particular single factor. It is influenced by a number of factors, such as adequate food, housing, basic sanitation, healthy lifestyles, protection against environmental hazards and communicable diseases. (Mackenbach, J. & Kunst, A. et.al., 2007). Health is thus the product of the interaction of our environment, socio-

economic and psycho-social conditions, cultural norms and beliefs with our genetic inheritance. "The social conditions, in which people live, powerfully influence their chances to be healthy. Indeed, factors such as poverty, social exclusion and discrimination, housing, unhealthy early childhood conditions and low occupational status are important determinants of most diseases, deaths and health inequalities between and countries." [WHO (2004)]

Importance of health care access to all outlined by United Nations in Millennium Development Goals (MDGs), were adopted in the year of 2000. Out of eight MDGs, three are health-related goals that signify the health for all. Millennium Development Goal-4 aims to reduce child mortality, reduction in maternal mortality and access to reproductive health care are related to Goal-5, and reversing the spread of HIV/AIDS, tuberculosis and malaria come under Goal-6. Health also has a central place in SDG-3 to "Ensure healthy lives and promote well-being for all at all ages." In India, constitution fixes the legal obligations on governments to provide health care to all people in equal manner. India's first National Health Policy was adopted in 1983 followed by second National Health Policy of 2002. National Health Policy, 2017 is formulated to inform, clarify, strengthen and prioritize the role of the Governments in shaping health systems in all its dimensions- investments in health, organization of healthcare services, prevention of diseases and promotion of good health through cross sectoral actions, access to technologies, developing human resources, encouraging medical pluralism, building knowledge base, developing better financial protection strategies, strengthening regulation and health assurance. (National Health Policy, 2017)

Health is such a crucial factor that it takes a central position to measure the development status of a nation. India has registered a successive advancement on economic front but, still the health status of people lags behind the global standard. (Mukhopadhyay, A. 2011) The health gains in the country are highly uneven because of the regional disparity in availability and accessibility in health services and health infrastructure. Health infrastructure is the most important indicator to access the health care environment and welfare mechanism of a country. It signifies the investment priority with regards to the creation of health care facilities. Infrastructure has been described as the basic support for the delivery of public health activities. Health infrastructure includes five main components as: skilled workforce, integrated electronic information systems, public health organizations, resources and research. (Kumar & Gupta, 2012). Health infrastructure is considered as the most significant tool to makes provision of resources, materials and facilities to the individuals, and promoting good health and well-being. Better health infrastructure also increases the capacity of communities, states and nation to prevent diseases, to promote good health and well-being and prepare to respond to emergencies, chronic diseases, epidemics and other unseen challenges to health. (Kapur, R. 2020). Health infrastructure is thus regarded as the foundation for planning, delivering, evaluating and bringing about improvements in public health. The availability and accessibility of public health care services is thus totally dependent upon the presence of basic infrastructural facilities (Public Health Infrastructure, 2020).

The quality and quantity of health infrastructure in India is very poor to deal with new emerging medical challenges. During COVID-19 epidemic the health infrastructure of India reveals its fragile base of health infrastructure. The basic healthcare services and infrastructure totally collapsed while dealing with epidemic of COVID-19. Regional disparity in health infrastructure has played a major role in determining the death counts during COVID. The states having better health infrastructure and health care services registered low death toll in comparison to the states having poor health infrastructure. The Government of India's 1946 Report on the Health Survey and Development Committee (also known as Bhore Committee) had declared "the inadequacy of existing medical and preventive health organization" as one of reasons for India's poor health condition in its report. So, there must be a long-term strategy to improve the healthcare infrastructure by focusing on workforce capacity and competency, information and data systems, and organizational capacity in the country. The other major reason for poor accessibility to health for all in India is the domination of the private sector in health sector. The rapid growth of private health sector has resulted in a situation where a large share of health infrastructure has come under the private players, the result of it is that these institutions have become commercial units and the social-welfare objective has taken a backseat in India. (Vij, D. 2019).

Although the government initiated National Rural Health Mission Programme (NRHM) aiming to bring qualitative and quantitative changes in the health infrastructure mainly in rural areas. However, the goal to provide a universal access to healthcare facilities remains a distant dream in rural India. Under the NRHM some steps have been taken for the transformation for rural health infrastructure. NRHM provides different standards of healthcare institutions at different levels, namely Community Healthcare Centre (CHC) for a population of 80,000 to 120,000 people; a Primary Healthcare Centre (PHC) for a population of 30,000 (20,000 in hilly areas); and sub-centres at the lowest for a population of 5,000 people (2,000 in hilly areas) (Kumar & Gupta, 2012).

These health inequalities are one of the main challenges for public health. Health inequalities are largely due to the unequal distribution of health determinants between people with different positions at the social hierarchy. People in lower socio-economic status are more exposed to health hazards in the physical environment, as they more often experience psychosocial stresses, and they are more likely to adhere to unhealthy behaviors, such as smoking, inadequate diet, excessive alcohol consumption and lack of physical exercise and awareness. There is a great potential for improving population health by investing in health care services and developing health infrastructure in equal and balanced manner in different regions of the country. The backward regions and rural areas must be the focus centers to develop the health infrastructure, because it helps to reduce regional disparities in health infrastructure and improve the overall well-being status of people.

Objectives

The main objectives of the research paper are as follows:

1. To analyze the overall status of health infrastructure in Bulandshahr district
2. To find out the level of health infrastructure in different blocks of Bulandshahr district
3. To access the availability of different health infrastructure indicators in all blocks of Bulandshahr district

Research Methodology

The present research paper is based on secondary sources of data. The data is mainly collected from the District Census Hand Book of Bulandshahr District and Census Book 2011 and various research articles are used to conceptualize the theoretical framework of the paper. In this research study, to find out the pattern of regional disparity in health infrastructure in Bulandshahr district following indicators are taken into account:

1. Number of Allopathic Hospitals
2. Number of Ayurvedic Hospitals
3. Number of Unani Hospitals
4. Number of Homeopathic Hospitals
5. Number of total Beds Availability
6. Number of total Doctors
7. Number of paramedical staff
8. Number of other health staff
9. Number of Family Health Centers
10. Number of Family Health Sub Centers
11. Number of Primary Health Centers (PHC)
12. Number of Community Health Centers (CHC)

Available data for each indicator is processed with the use of Z-Score technique and then a composite Z-Score is calculated for all indicators in each block. With the use of Arc-view Software the pattern of health infrastructure in high, medium, low category is presented in Bulandshahr district map.

Study Area

The study area in the research paper is Bulandshahr District. Bulandshahr District lies in the western Uttar Pradesh and it is one of the six districts in Meerut division of Uttar Pradesh. Its latitudinal and longitudinal extent is 28°4'

and 28°43' N and 77°18' and 78°28' E respectively. The district is situated near to Meerut and it is located between the Ganga and Yamuna rivers. The Ganga River separates it from Moradabad and Badaun districts in the east. And in west the river Yamuna separates it from Delhi. District Ghaziabad is in the north and district Aligarh lies in the south of the Bulandshahr district. The district is divided into seven sub-divisions/tehsils namely Bulandshahr (Sadar), Sikandrabad, Syana, Anoopshahr, Debai, Shikarpur and Khurja. There are 16 development blocks in the Bulandshahr district namely, Sikandrabad, Gulaothi, Agota, Lakhaoti, Bulandshahr, Bhawan Bahadur Nagar, Syana, Unchagaon, Jahangirabad, Anupshahr, Danpur, Dibai, Shikarpur, Pahasu, Khurja and Araniya. There are 889 Gram Panchayats and 1242 Revenue villages in Bulandshahr District.

Fig.1 Location map of Bulandshahr District

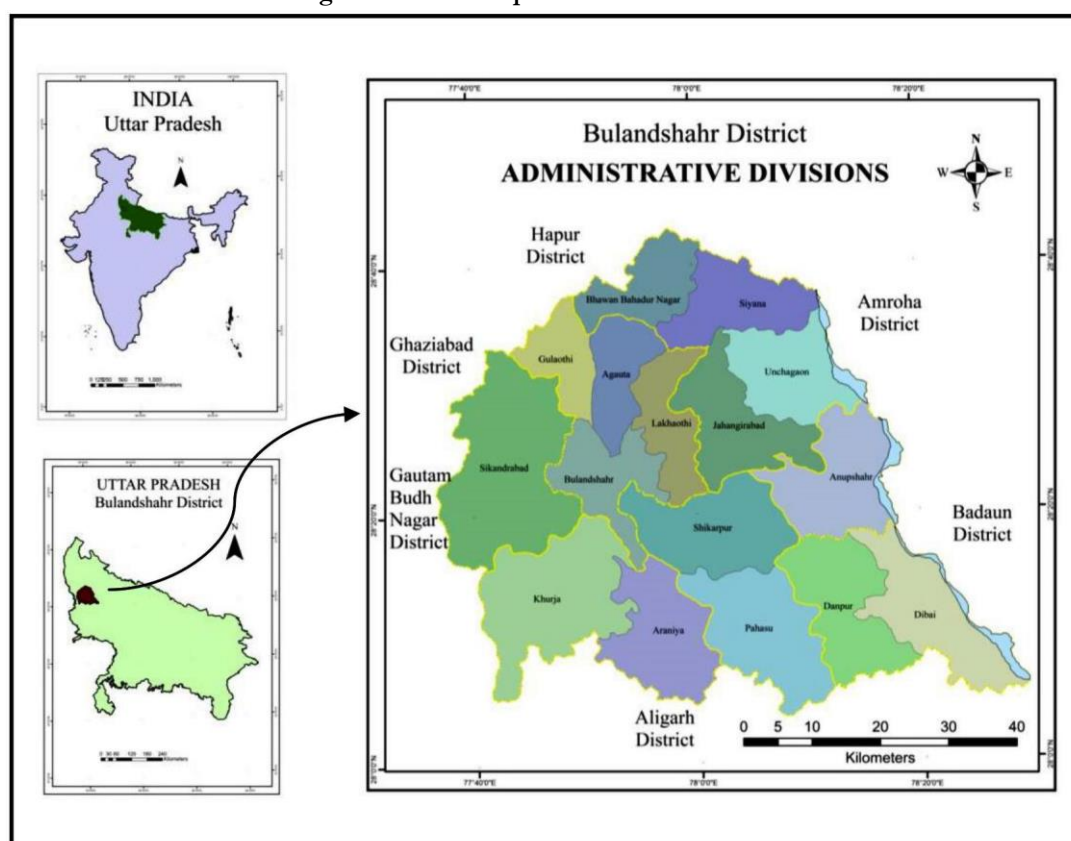


Table: 1

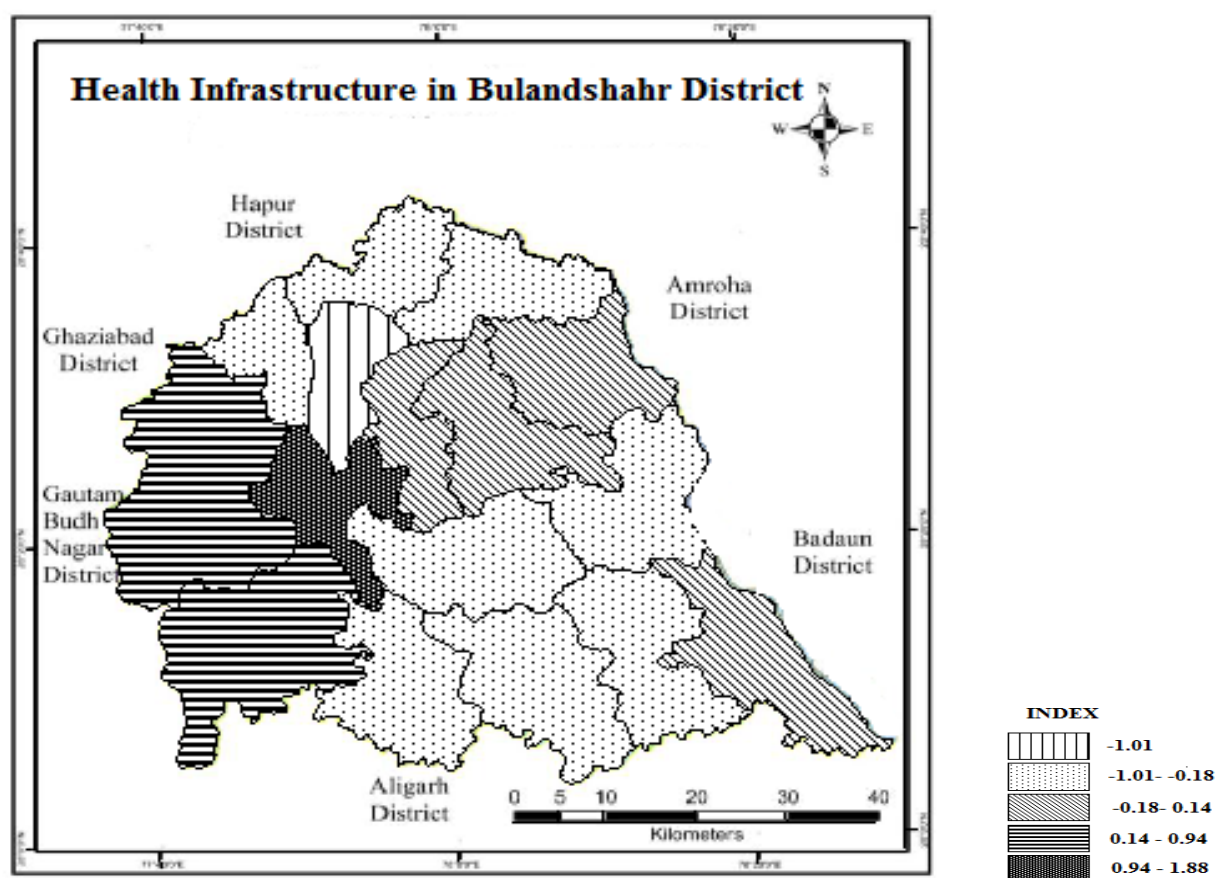
Z –Score of Health Infrastructure in different blocks of Bulandshahr District

BLOCKS	Alopat heic Hospit als	Ayurve dic Hospit als	Unani Hospit als	Homyo patheti c Hospit als	No. of Total Beds	Total Doctor s	Perame dical	Other Health Staff	Famil y Healt h Cente rs	Famil y Healt h Sub Cente rs	Commun ity Health Centers (CHC)	Primar y Healt h Cente rs (PHC)	Comp osite Z Score
Sikandraba d	0.56	2.11	-0.43	-0.2	0.56	1.37	1.37	1.28	1.34	2.02	-0.72	1.98	0.94
Gulaothi	-0.56	-0.05	-0.43	-0.2	-0.38	0.21	0.31	-0.16	-0.61	-1.14	-0.17	-0.19	-0.28
Lakhaothi	-0.56	-0.92	1.3	-0.2	-0.38	1.03	-0.04	-0.07	1.34	0.09	-0.17	0.24	0.14
Bulandshah r	2.8	1.25	-0.43	2.22	3.42	2.42	2.08	2.46	0.37	0.79	3.68	1.54	1.88
Shikarpur	-0.56	-0.05	-0.43	1.41	-0.47	-0.25	-0.75	-0.25	-0.61	0.09	-0.17	-1.06	-0.26
Bhawan Bahadur Nagar	0.56	-0.92	-0.43	-1.01	-0.51	-0.37	1.02	-0.53	-0.61	-0.26	-0.17	-0.62	-0.32
Syana	-0.56	0.81	-0.43	-1.01	-0.27	-0.6	-0.75	-0.16	-0.61	-0.61	-0.17	-0.62	-0.42

Jahangirabad	-0.56	-0.05	1.3	-0.2	-0.38	1.26	0.31	-0.34	-0.61	0.09	-0.17	-0.19	0.04
Khurja	1.68	-0.05	-0.43	0.61	0.57	-0.02	0.66	1.55	-1.59	0.61	-0.72	1.54	0.37
Araniya	-0.56	0.38	-0.43	-0.2	-0.42	-0.6	-0.75	0.11	-0.61	-0.44	-0.17	-0.62	-0.36
Pahasu	-0.56	-0.92	-0.43	-1.01	-0.42	-0.95	-0.75	-0.16	1.34	0.26	-0.17	0.24	-0.29
Unchagaon	-0.56	0.38	3.03	1.41	-0.38	-0.49	-0.04	-1.07	-1.59	0.26	-0.17	-1.06	-0.02
Danpur	-0.56	-1.36	-0.43	-1.01	-0.51	-0.6	-0.04	-0.16	0.37	0.44	-0.17	-0.19	-0.35
Dibai	0.56	1.25	-0.43	-0.2	0.57	-0.6	-0.4	-0.34	0.37	0.44	-0.17	0.68	0.14
Anupshahr	-0.56	-0.49	-0.43	0.61	-0.3	-0.6	-0.04	-0.43	0.37	0.09	-0.17	-0.19	-0.18
Agota	-0.56	-1.36	-0.43	-1.01	-0.69	-1.19	-2.17	-1.7	1.34	-2.72	-0.17	-1.49	-1.01

Source: Data calculated by research scholar from District Statistical Handbook of Bulandshahr District 2020-21

Map: 1 Pattern of Regional Disparity in Health infrastructure in Bulandshahr District



Discussion

The health infrastructure is critical tool to provide basic provision for the delivery of public health activities in a productive and meaningful manner. Developments in health infrastructure create a significant contribution in promoting health and well-being of all people irrespective of age groups, communities and backgrounds.

Different indicators are explained in a detailed manner to understand the pattern of regional disparity in health infrastructure in Bulandshahr district:

Availability of different types of Hospitals:

Block level data for Allopathic Hospitals, Ayurvedic Hospitals, Unani Hospitals and Homoeopathic Hospitals is sourced from District Statistical Handbook of Bulandshahr District 2020-21. Table 1 reveals that Bulandshahr block (2.80) has highest concentration of Allopathic Hospitals, followed by Khurja block (1.68). The reason for highest

availability in these two blocks is attributed to their highly urban nature. Ayurvedic Hospitals are available in good number in blocks of Sikandrabad (2.11), Bulandshahr (1.25) and Diabi (1.25). Concentration of Unani Hospitals is highest in Unchagaon Block (3.03) followed by Lakhaothi and Jhangiharabad Block. Shikarpur Block and Unchagaon blocks have higher number of Homiopathic Hospitals than other blocks. These blocks have low concentration of Allopathic Hospitals, so they are supported by secondary types of hospitals like, Unani hospitals and Homiopathic hospitals.

Number of Total Beds:

Availability of beds in the hospitals and their number is another important indicator to access health infrastructure status in a district. Table 1 display that Bulandshahr Block (3.42) has the highest number of beds in the hospitals, followed by Khurja and Dibai Block. The highest number of Allopathic hospitals and effects of urban agglomeration to concentrate health infrastructure is the main reason for availability of higher number of beds in these blocks. Agota block(-0.69) has the lowest number of bed availability in Bulandshahr district.

Number of Doctors, paramedical and other health worker staff

Doctors and paramedical staff availability is the most basic necessity to provide the better health care for people in the district. The doctors' availability is highly pathetic in India and the weakest part of the health infrastructure and resources in the country. According to the health ministry data the Number of doctors per thousand populations in India is 1: 1404 and it is well below the WHO norm of 1: 1000. Not only the numbers of doctors but their concentration is highly skewed and favoring the urban areas and developed states. The BIMARU states including Uttar Pradesh are lagging behind the developed states like Kerala and Maharashtra. The regional disparity in health care services, resources and infrastructure is also visible within the Uttar Pradesh.

Block level data of doctors and other paramedical staff availability in Bulandshahr district reveals that Bulandshahr blocks tops the list, followed by Sikandrabad block. Because of higher number of doctors availability these blocks enjoy the better health resources and health infrastructure.

Availability of PHC and CHC and Family Health Centers and Family Health sub centers

Primary Healthcare Centre (PHC) and Community Healthcare Centre (CHC) are healthcare institutions at different levels in India constituted under National Rural Health Mission (NRHM). Community Healthcare Centre (CHC) are established to serve the areas having a population of 80,000 to 120,000; while PHC serves for a population of 30,000 (20,000 in hilly areas). Block level data of CHC in Bulandshahr district reveals that Bulandshahr block has the highest concentration of CHC. While, the availability of PHCs is higher in number in the Sikandrabad block (1.98), followed by Bulandshahr (1.54) and Khurja block(1.54). Sikandrabad block, Pahasu and Bulandshahr block have high number of Family Health Centers and Family Health sub centers.

Overall health infrastructure status in Bulandshahr district

Composite Z-Score of all health infrastructure related indicators is calculated to know about the overall status of health infrastructure facility in Bulandshahr district. The Bulandshahr block (1.88) has better health infrastructure than the other blocks in the district. Sikandarbad Block (0.94), Khurja (0.37), Dibai and Lakhaoti (0.14), Jahangirabd (0.04) blocks are in medium category. The Agauta block has the lowest availability of health infrastructure in Bulandshahr district. The lowest health infrastructure availability in Agauta block is due to the reason because it is newly created block, that's why there is not much development of health infrastructure facilities.

The data clearly indicated that in Bulandshahr district there is high disparity in availability of health infrastructure between all the blocks. Mostly blocks have low quality health infrastructure which affects the health care services availability and in turn the overall health well-being of the people.

Suggestions for reducing regional disparity in health infrastructure

There is urgent need to minimize the regional disparity in different aspects of health sector- infrastructure, doctors, medical equipments, health insurance and information. Following measures can be implemented to upgrade the health infrastructure:

1. Government should make separate provisions for health infrastructure in health policies and related budget allocations.
2. The main focus of government should be to develop health facilities in the rural areas with help of public-private partnership. This provision not only will reduce the regional disparity but also will benefit the rural and urban areas both. On one hand it can reduce the burden of urban health infrastructure and on the other hand in rural people easily can get better health care services in their nearby.
3. Medical colleges and institutions are highly shortage in number in the country. Along with it, the high fees structure in private colleges also forces students to go abroad to get medical education. Both these problems in combined reduce the numbers of medical professionals in India.
4. Strengthen the PHC and CHC centers in terms of autonomy and finance to provide better health care services in rural areas.
5. The medical interns must have practiced some time in rural areas to reduce the gaps of health services and infrastructure in remote and backward villages.

Conclusion

Health infrastructure is the most significant component of health ecosystem in the society of any country. The entire health care service and health well-being of people is dependent on the quality, quantity and accessibility of health infrastructure. The strengthened health infrastructure benefits a country in a multifold manner. Thus, the health of infrastructure gap in inter-region and intra-region level should be minimized at top priority level and in mission mode manner. Improving health of people by investing in health infrastructure and health ecosystem is the most suitable method to harness the vast human resources and demographic dividend of India.

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