

Rural Health Care Challenges and Urban Development

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Abstract

The pandemic has impacted the economy globally and it is realized that India needs to invest in the healthcare by bridging the gap between the rural and urban areas. Health care services in rural and urban areas during and post-COVID have increased.

The gap between urban and rural governance needs to be bridged. The Government of India scheme - Smart City Mission is aimed to develop in 100 cities across India and Niti Aayog in 2021 has recommended the development of 500 healthy cities.

The aim of this study is to discuss the challenges related to healthcare facilities in the rural and urban areas. It was observed that during COVID health care facilities in rural areas were scarce and the interconnectivity between urban and rural areas was limited resulting in loss of human life and delay in reaching of medical aid to the rural and remote areas. It is necessary to integrate the rural and urban areas so as to have a holistic approach on healthcare facilities. The urban-rural connect is significant and the projects of the government like the smart cities and healthy cities need an integrated comprehensive plan to remove disconnect, multiplicity and overlapping of functions and it is important to ensure proper supply chain of medicines, equipment and facilities especially in healthcare with an interface of IOT and digitalization. The Location allocation modelling of healthcare facilities need to be integrated to provide for smart health care. There is a need of reduction in travel time between healthcare facilities to make urban rural linkage stronger and more efficient. This is crucial to their respective development in the social, economic, and political realms.

Keywords: Covid-19, rural healthcare, smart cities, rural-urban linkage.

Introduction

Cities in India house 31% of India's current population and produce 63% of the country's gross domestic product. Urban areas are anticipated to house 40% of India's population and produce 75% of the country's gross domestic product by 2030 (Registrar General of India, 2020). The Smart City Mission introduced by the GOI in 2015 is aimed to improve infrastructure and services to enhance quality of life and drive economic growth. This is to be achieved by the providing smart solutions in the areas like e-governance and citizen services, water, waste and energy management and Urban Mobility, etc. Typical features of smart city development include efficient healthcare system; improved surveillance for security, sustainable infrastructure, data-based intelligent traffic management system among other facilities and amenities that make a city an attractive place for living comfortably (MoUD, 2015).

The development of smart cities and rural areas is being carried out in isolation which is resulting in the dichotomy of comprehensive development of the smart cities and rural villages. The Government of India is focussed on developing infrastructure and healthcare facilities, etc. and has invested 21% of funds of the smart city projects in urban areas in public-private partnership module in the healthcare. There is minimal investment in healthcare facilities due to negligible alliance in PPP module in rural areas. Only one doctor or a trained healthcare provider with any degree is available per sixteen villages as per studies. Only 20% of the hospital beds are available in Rural India as against 70% of the population which lives in villages (John, 2005). The rural health care system in India was deficit to stop the spread of COVID-19 in densely populated Indian States. The effects of this pandemic, and especially the lockdown strategy, were multifaceted.

COVID-19 brought in reverse migration. In order to support their families, many were forced to relocate to rural areas across the country. The government did not envisage and was unprepared as the data for the migratory population entering the villages was underestimated and miscalculated. People suffered financially, socially, and mentally due to poor economy with limited resources and services in villages.

The rural areas did not have adequate housing and quarantine facilities to put the migrants in camps set up in government buildings such as primary schools, part time unused buildings, isolation centres of their respective panchayats and tents. The shortage of these temporary structures in form of makeshift hospitals made the lives of migrants miserable.

Globally, from the literature and survey it is seen the rural areas have highest overall strain of this disease. The prevention of the spread of Coronavirus was challenging in rural areas as it involved testing, tracking and contact tracing of migrants. There was shortage in COVID-19 testing facilities like Biosafety testing labs, BSL-1, BSL-2. Additionally public health centres and district hospitals were ill-equipped and inadequately facilitated with the lack of doctors, hospital beds and monitoring and surveillance systems.

GIS mapping of the health care facilities for the rural areas is essential in terms of coverage factor by distance and accessibility time. The function of the location allocation models can be optimized by the identification of basic societal needs which helps in optimizing the cost and time.

Rural Healthcare

There is one Sub-Centre for every 5000 people in the three-tiered Indian rural health care system. A primary health centre (PHC) serves as the first point of interaction between the community and the primary healthcare system. There is one PHC for every 30000 people. It is the point of contact between the village community, the medical officer, and Community Health Centres. Community Health Centres are provided one in number per 120000 populations. These are being established and maintained by the State Governments (Table 1) (Directorate General of Health Services Ministry of Health & Family Welfare Government of India, 2012).

Levels	Name	Manpower and facilities	Population
Level-1	Sub-Health Centres (SHC)	Rural health care practitioner, ANM's (2 no.) and Health Worker Male	3000-5000
Level-2	Primary Health Centres (PHC)	Nurses (5 no.), LHV, ANM, Health Wonder /male), Pharmacist (2 no.), lab	20000-30000

		technicians (2 no.), doctors- allopathy (3 no.), Ayush (1 no.), dental (1 on weekly rotation), accounts assistants, DEO	
Level-3	Community Health Centres (CHC)	Nurses (18 no.), PHN, ANM, Health Wonder /male), Pharmacist (3 no.), lab technicians (3 no.), doctors- allopathy, Ayush , dental (8 no.), specialists (6 no.) radiographer, health programme/ HMS/ account manager, accounts assistants, DEO	80000-120000
Level-4	Sub-district Hospital (SDH)		1 per 10000 population
Level-5	Medical College		1 per 750 beds per district (per 2500000 population)

Table 1 Structure of Rural Healthcare System in India

Source: Author adapted from HLEG Secretariat

As of March 2018, there is a health facility deficit of 18% at the Sub-Centre level, 22% at the PHC level, and 30% at the CHC level. Although the number of institutions has increased over time, labour availability is substantially lower than what the World Health Organization advises. In rural India, there are 3.2 public hospital beds for every 10,000 population. In several states, the number of rural beds is significantly lower than the national average (Kumar et al., 2020).

Urban- rural linkages

Despite numerous and extensive rural development initiatives following independence, rural areas are still rife with extreme poverty. A significant barrier to progress in many villages remains to be insufficient basic infrastructure, both social and physical including roads, housing and health care facilities. Private investors are naturally hesitant to fund rural

infrastructure projects. This is based on a number of factors, including the lack of or low returns on their investments as well as the uncertainties and delays associated with realising anticipated revenues from the users who are in poverty, particularly for regions of such crucial sectors as housing, roads, and drinking water.

The governments and associated organisations must work to maintain and safeguard the infrastructures that improve the urban-rural links. It is necessary to upgrade the road infrastructure, build more healthcare facilities, and create efficient administrative procedures to provide services from rural to metropolitan areas and vice versa. A significant barrier in many developing nations, particularly India, is the absence of dedicated healthcare corridors. Despite the fact that it is difficult to assess from the outside, the state of rural health care in India has not altered significantly over the previous ten years. The sick are still being treated by unqualified medical professionals and unreliable medical procedures. In case of an emergency, the villagers have to travel a great distance to the closest hospital, and the only practical mode of transportation is private transportation, which many cannot afford.

Due to financial constraints and the high cost of transportation to urban centres, the majority of people in rural India choose to receive their medical care from government hospitals. The current healthcare facilities in rural areas are underfunded, have a limited supply of medications, and lack qualified and committed staff members. In addition, poorly constructed roads, railroad systems, and inadequate power supplies are some of the main drawbacks that make it challenging to establish a remote healthcare institution.

Results and Discussions

1. It is important to have integration of rural areas with urban areas in all fields of development, more importantly healthcare facilities. It is important to equip the CHCs with better facilities with specialized care. India's rural hospitals are not prepared to deliver good quality patient care even during normal times, let alone a pandemic situation. A holistic and sustainable approach needs to be at the core of rural healthcare facilities strengthening along with urban areas.

2. The government policies are directed towards schemes, for example, developing a hundred bedded hospital for a district. It is seen that there are a number of hospitals offering same medical care which can be enhanced to provide specialized services to the general public to avoid the multiplicity of the same facility. This will take care of equipment, cost, manpower and time to provide scope for treatment of other illness and diseases. This can be accomplished by IOT, digitalization and rationalization of supply chain for medicine, manpower, equipment and transportation, etc. This shall result in alignment of traffic fare infrastructure. Critical routes should be incorporated in the vision plan/CDP of the cities with the integration of rural areas.
3. The only practical means of transportation for the villagers in an emergency is private transportation, which many of them cannot afford. The people have to travel a significant distance to the closest hospital. Lack of road infrastructure, means of transportation, increased travel time and distance leads to decrease in facility accessibility and the location effectiveness decreases. The Location allocation modelling of healthcare facilities and applications disseminating the knowledge to the citizens need to be integrated to optimize the time and cost.
4. Supply of basic medicine is irregular in rural areas. The fair price shops (PPP model) are located in tertiary care and secondary care hospitals. These fair price shops charge differently in different locations. Discounts vary from 50% to 70% by the same provider on the same medicine. Non-availability of basic drugs is a persistent problem of India's rural healthcare which needs to be addressed.
5. The majority of sub centres are operating without any available buildings; thus, finding a facility for sub centres should be given priority. Only when infrastructure is ready to carry out functions will monetary allocation be beneficial. The improvement of sub-centers and the distribution of funding are crucial since sub-centers serve as the community's initial point of contact with the healthcare system.
6. Temporary structures like the containers, unoccupied/ unused buildings, panchayat ghars and unused train coaches/ aeroplane, etc. can be used to upgrade the healthcare facilities in the rural areas by retrofitting which shall provide economical solutions to

- the less populated rural areas. Prefabricated, precast techniques sandwiched concrete and latest construction technologies shall bring down the cost and time for the upgradation of health care facilities.
7. The GOI through NEP is providing incentives for the capacity building at graduation and post-graduation level in medical education. It is also promoting Ayurveda, Unani, Yoga, Siddha and Homeopathy and tribal medicines besides allopathy. It is to promote and provide healthcare to one and all.
 8. Capacity building of health care workers like the ASHA workers which the GOI did during the pandemic shall provide the employment opportunities and other manpower to the rural health centers. These ASHA workers act as a link between the health centres and the villagers and address health related issues of rural population especially women and children. They are trained to advise village populations about sanitation, hygiene, contraception, and immunization to provide primary medical care for diseases.
 9. Ayushman Bharat Healthcare Card linking of it with the government portal shall provide for the documentation, listing and head count of the people, disease profile resulting in identification of the need of the area.
 10. The population needs to be educated about the value of healthcare programmes and government policies of insurance like PM Ayushman Bharat Health Infrastructure Mission, their rights, and available financial assistance options.

Conclusions

The Government of India is focused to bring out projects, schemes and policies aiming towards national development. Smart City Mission aims to improve the quality of life and drive economic growth using information and communication technology and healthy city guidelines have not been defined yet. Also, these projects are specific to the development of urban area and its infrastructure. There is need of projects with a focus on integration of urban and rural areas addressing the urban and rural healthcare.

The current schemes and policies lack a holistic approach in supply chain management of equipment, medicine and ease of transportation. IOT, digitalization and block chain

technology can be adopted to create dedicated transport corridors for the same. Location allocation of healthcare infrastructure also needs to be considered with cost implications. A reduction in travel time between these facilities will make the urban rural linkage stronger and more efficient, reduce cost and will ensure that medical health facilities are available to one and all.

Modular planning of hospitals, adaptability and reuse of buildings and temporary structures with net zero and sustainable strategy should be considered to enhance the rural healthcare infrastructure. Capacity building programs and awareness campaigns about the benefits of schemes and projects should be facilitated.

India being a geographically, geologically, culturally diverse region, the requirements are need and time based. Isolated growth in terms of only rural areas or urban areas is not the answer. Integration is the key answer to the overall development, success and growth of any state or country.

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