COSMOS: A JOURNAL OF GEOGRAPHY
Volume- 1, Issue- 4 | 2024 ISSN: 3048-9938

Distribution of Health Facilities in Remote Areas of Northeast India: Challenges and Solutions

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Abstract

Even distribution of health facilities still poses a big problem in the region as part of Northeast India which is geographically and socio culturally diverse and challenge. This research maps healthcare delivery systems in the eight states of North Eastern Region of India to assess geographical distribution and inequities in providing health care services. However, despite array of government policies and initiatives in health sector, the region still has the problems like, lack of proper physical facilities, inadequate human resource in the health sector, and geographical challenges due to hilly and mountainous terrain of the region.

With the primary and secondary data together, this study offers a net description of the contemporary health facilities such as the Primary Health Centres (PHCs), Community Health Centres (CHCs), and district hospitals to give direction with spatial accessibility concerns. The study also explores the effect of these restricted health care policies on population health with reference to women, children and old aged persons. Real-life examples of some specific district are employed to explain the devastating cumulative impact of weak MG on such health status indicators as high rates of maternal and infant mortality, and increasing incidence of previously controllable diseases.

Introduction

Chronic diseases require that patient's have an access to quality health care as this is one key determinant of development. India may boast of concentrating its efforts on establishing a good health care service delivery system; nonetheless, the accessibility and utilisation of health facilities are not homogeneous across the regions. More evident of this Disparity is seen in the Northeastern region comprising of eight states, namely Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim. This terrain is hard, culturally diverse, and socio-politically sensitive, factors that make delivering quality health care doses challenging.

The region, with its extensive tracts of hills and valleys, is inhabited by about 45 million people constituting about 3.7 percent of the total population of the country. In the region, attendees were hindered by geographical barriers, affordable accessibility of quality care, inadequate transport and communication networks in the vicinity of settlements. These are further exacerbated by issues of terrain, no access to health facilities, inadequate staff, and financial constraints that characterise healthcare provision. In spite of the many formulated national and regional health care policies such as the NHM, health care still has many open gaps particularly in the rural and hard to reach regions of these states.

As for healthcare there are various issues that can be attributed to the region in the Northeast. Health facility accessibility remains a major challenge due to inadequate numbers of health facilities which are also, in most cases, of low quality, coupled with an acute shortage of health professionals. A good number of these places are still either underserved or wholly unserved with health facilities. Lastly, cultural characteristics such as language, health beliefs and practises in the alike affect the utilisation of existing health services. It is also found that poor socio-economic status of the region in terms of low literacy, high illiteracy and unemployment 'Al' another influential factor affecting health status as well as health awareness and utilisation of services.

Explaining the contemporary distribution of health facilities and determining the deficiency of service provision is, therefore, vital for policy in the light of these challenges. It is for this reason that this research aims at reviewing the distribution of the health facilities in the northeast region with regards to access, utilisation and quality of health services. Thus, based on the types and geographical distribution of health care outlet infrastructure like the first tier PHCs, the second tier CHCs, sub-centre and the third-tier district hospitals the study seeks to reveal the inequity/exemptions and suggest areas for top priority.

Literature Review

Health care system in northeast India has been the focus of several investigations to reveal the daunting problems of a region that is geographically and culturally far removed from the rest of the country. Due to the latter, it is relatively challenging to deliver healthcare services in the region; the region consists of mountainous terrains and forest covers, and Das & Parthasarathi (2020) stipulated that geographical inaccessibility has negative impacts on access to health facilities. The number of health facilities, along with weak transport systems, also impacts the challenge of availability of healthcare facilities in the rural region comparatively to the urban region (Bora & Saikia, 2018).

The works of various authors, including Banerjee et al (2021) observe that Northeast India lags behind the rest of the country in terms of health facilities: PHCs, CHCs and district hospitals. Of the three States, the shortage is most severe in Arunachal Pradesh, Mizoram and Nagaland where ratio of doctor to patients is very bleak. The study by the National Health Mission (NHM, 2022) reveals that the health care worker availability of the region is far behind the WHO assimilation norms where the absenteeism of healthcare staff is too high.

Regarding policies on healthcare, Sharma (2019) evaluates programmes such as Ayushman Bharat in northeast India. These schemes are to an extent an affordable way of accessing healthcare services because of the constraints associated with distance and infrastructure. The author also points to the fact that the main local communities do not know the availability and functionality of government health care programmes to enforce them. Similarly, Singh and Singh (2020) noted that; other factors, including traditional health beliefs, fear of modern medicine, and negative attitude to the formal health system, also lowers the level of acceptance for the formal health services.

Telemedicine has been using as a possible solution in overcoming the geographical barriers has been evaluated. Telemedicine research by Rao et al. (2023 suggests that it can help narrow the gap between the population and care givers; however, issues of inadequate internet access, and illiteracy are formidable barriers. In addition, Roy (2021) overviews the significance of employing non-governmental organisations (NGOs) and community health actors in increasing the efficiency of health care in facility inaccessible areas; the author proceeds to propose that community involving strategies expose the necessary reliance on health care reliance in difficult to reach populations.

Regional Overview

The eight northeastern states of India namely Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim present a varied geographical signature, stressing cultural and political interphase. Stretching over an expanse of 77.42 lacs hectares, it contributes nearly 8% of the total geographical area of the country, socio-economic, emerging from the geographical structure including hills, valleys, rivers and forests etc Have a pivotal role in influencing the socio-economic and health aspects of the people.

The Temotu Province is largely rural, with about a 85% of the population living in villages located in hard-to-reach and sometimes; isolated and inaccessible locations. This kind of dispersion, coupled with difficult geographical environments, is perceived to present some inherent difficulties in the implementation of infrastructure as well as delivery of services. The experience of the state of Assam is relatively better than other states, but even within the areas of Assam, the extension of good health care facilities has not been properly developed especially in the rural areas. Three of new states such as Arunachal Pradesh, Mizoram and Nagaland are geographically characterised by hills and mountains, which make it very difficult to provide required health facilities to the inhabitants.

On the economic front, north eastern states are raw with other states of India levels of infrastructure and per capita income and higher incidences of poverty. In a recent report submitted by the Ministry of Development of North Eastern Region (DoNER), agriculture is reported to be the main economic activity, with little investment in industry. This means that there are poor investment on the health facilities and services in the economy. Also, due to constant natural disasters like floods and landslides, economic unpredictability is even worse, and the poor and existing health care system is deteriorated again.

Ethnically, the Northeast is inhabited by over 200 tribes that have their own languages and cultural practises. This cultural diversity only serves to complicate how healthcare service delivery is done in the country. In many tribal communities healthcare practises are very popular and traditional treatments are preferred even today while there is lack of acceptance of the modern health practises in case they do not conform to the traditional usage. For example, it has been found that lay health seeks recourse to traditional healers instead of professional practitioners more often and particularly in the rural areas where access to hospitals is difficult.

The literacy rate of Northeast India region is slightly better than the national average and education indices of the region are improving; and Mizoram, Tripura et cetera. Nevertheless,

the quality, standard of education and the level of health awareness continues to be inveterate mainly in districts of Arunachal Pradesh and Nagaland though the government has made conscious efforts at spreading health awareness across the state. This lack of health literacy has a direct bearing on patients' knowledge and practises about when and where to seek treatment, thus causing definite delays in diagnosis.

Current State of Health Facilities

There exists weak health care facilities in Northeast India despite a gradual enhancement of healthcare in the last few decades as a result of social change and political movements, and inadequate geographical distribution especially in rural areas and other hard-to-reach communities. The health care system in the region includes PHCs, CHCs, sub-centres and District hospitals, and mainly continues with government support. But there is also a considerable variation between the urban and the rural health care facilities within the region, which shows influence by the geographical and administrative barriers.

The eight states in Northeastern region have 92 PHCs and 82 CHCs per one crore population and nearly 7000 sub-centres according to the National Health Profile 2023. A number of these facilities exist in Assam owing to the fact that it is one of the most populous states in India. For example, Assam currently has close to 800PHCs and 200CHCs in anticipation of a population of over 35 million. In contrast, states like Arunachal Pradesh, Nagaland, and Mizoram have many-fold less PHCs or CHCs to accommodate their populations that are dispersed over challenging geographic landscapes.

With regard to the density of availably health professionals, he was informed that there is a serious scarcity of health personnel in most of the regions in Northeastern India. Based on the Rural Health Statistics Report, 2022 they enunciated that Arunachal Pradesh's state only has 30 doctors per 100000 population through the WHO recommended ratio is 100 doctors per 10,000 population. The same issues are felt by Nagaland and Manipur, that both of which have a comparable Medical Staff Population Ratio, much lower than the national average. About half of the PHCs in a number of states, including the most remote ones, are staffed without even qualified medical practitioners, which means that the main providers of primary healthcare services at the grassroots level are auxiliary nurse midwives (ANMs) or, in some cases, paramedical personnel.

For infrastructural facilities the National Family Health Survey-Sanjeevini (NFHS-5) conducted in the year 2019-21 gives some indications regarding the healthcare facilities in the region. According to the survey conducted the study showed that only 60 % of the PHC possessed regular electricity and portable water and only 40% had basic diagnostic tools like X-rays and ultrasound. The infrastructure of radio stations in some states remains woeful though some states like Assam and Sikkim have better stations than before. Sources pointed out that only 64% of the rural CHCs have computers, 42% possess imaging equipment, while 43-59% own lab equipment; all are crucial to diagnosis and treatment of patients.Only 40-50% have the necessary drugs, which already indicates that many CHCs lack comprehensive equipment and drugs to meet the treatment needs of the patients.

The distribution of health facilities is also imbalance, many districts in the region are designated as health infrastructure “black spots”, because of acute shortages. For instance, in Arunachal Pradesh, several districts like Anjaw and Dibang Valley have very limited or virtually no healthcare centre, the few which are available too are not well patronised owing to inadequate accessibility. In addition, there is inadequate supply of hospital beds compared to the overall rate in the country; with an estimation of 0.5 bed for every 1000 people in states like Meghalaya while nationally according to the statistics of MoHFW in 2022, the figures stands at 1.7 beds for every 1000 people.

Challenges in the Healthcare Distribution

The development of the healthcare facilities across Northeast India implicates some of the challenging barriers given the geographical characteristics and socio economic and cultural structure of the area. All these challenges play a cumulative role in enhancing disparities in the various health related issues both in urban and rural facilities.

1. Geographical Barriers

Poor physical access to health facilities is a major hindrance to healthcare in Northeast India because of the rough geographical features of the region. A number of Northeast Indian states are geographically mountainous such as Arunachal Pradesh, Mizoram and Nagaland, where several regions are virtually unreachable by road. These make it difficult to put and maintain good health facilities through geographical barriers. Communities reside in inappropriately terrains of hills andover valleys, this complicates the physical disposition ofhealthcare professionals to the said areas, and compounded during the rainy season which is characterised by frequent cases of landslide and floods.

2. Lack Of Appropriate Health Care Facilities

There is still a poor development of health care facilities in the region. The geographical distribution of the first level health facilities for instance the PHCs, CHCs and the district hospitals reveals an urban biassed distribution. Based on the Rural Health Statistics 2022, a number of districts in Northeast India constitutes the infrastructure dark zones which have poor or negligible access to health infrastructure. Its absence means that a considerable number of people has no access to health facilities and if they do, they spend lots of money on this basic necessity which may at any time prove unattainable.

3. The Scarcity of Health Care Human Capital

One major concern of client nations is the chronic scarcity of qualified healthcare practitioners. Because the area is remote and more often than not is in the developing world, it is challenging to attract and retain qualified doctors, nurses and specialists. From the National Health Profile 2023, available proportions of specialist and general practitioners per 1000 population in the many states of ardent northeast aspirant are still deficient than the benchmark rate in India or commonly recommended by the WHO. Another major issue in this relation pertains to remuneration – health workers do not receive suitable incentives to make the needed

commitments and work in rural facilities, which lack amenities and safety measures and are thereby chronically understaffed.

4. Absence of Minimum Supplies and Equipments

In developed areas where some form of health facility is present, there is always the challenge of unavailability of key merchandise. A significant number of the PHC and CHC camps lacks the appropriate equipments/medical facilities/materials and essential stocks/ drugs to diagnose and treat patients scientifically. According to the National Family Health Survey (NFHS-5) 2019-21, only 40 percent of health facilities in the region had even minimum diagnostic amenities. This inadequacy makes the patients to visit other urban facilities for even basic diagnostic procedures the delay contributes to poor health.

5. Again the region suffers from poor connectivity and transportation infrastructure.

Transport infrastructure in the area also remains limited and while few isolated settlements is accessible by all weather roads. While the region depends on poorly constructed roads in accessing health care, it is a familiar experience that during the rainy season, many villages find themselves stranded from critical services. The lack of a proper means of public transportation compounds the problem, with the actual access to emergency care almost impossible in certain parts of the country. The use of an ambulance is a severe issue as there are no functional services available in most of the rural areas and hence no quick medical accessibility.

6. Socio-Cultural Barriers

The population comprising the Northeast India region is composed of various ethnic groups which they enjoy linguistically, culturally, and healthcare diverse. These precaution strategies include but not limited to use of traditional birth attendants and traditional healers, which may increase the likelihood of delayed first attendance to formal health care facilities. Literature, for example, Singh and Singh, 2020 show that the reason for negative attitude towards government-owned health facilities is because there is little culturally sensitive medical facilities. Language restricts also present a challenge because many of the healthcare care givers do not speak the local dialects creating communication and trust break down.

7. Economic Constraints

The socio-economic status of the region puts a further attainment of health care to a higher level of difficulty. When healthcare services are available, many people with high poverty levels can hardly afford the services. Out-of-pocket expenditure incidence remains high, and although programmes such as Ayushman Bharat were launched to facilitate financial risk protection, many are still unaware or seldom use such schemes. Besides, due to constant calamities natural like floods in Assam, the economic status is already vulnerable, so people can barely afford to attend to healthcare needs.

Government Policies and Schemes

The central and the state governments have adopted several policies and programmes to enhance Primary Healthcare services, and access to those in various districts of Northeast India. Regardless of the existing challenges, the programmes have had some achievement regarding improving the health care system but inequalities still exist.

1. National Health Mission (NHM)

The National Health Mission (NHM), which was launched in 2013, is one of the most important of these campaigns intended at enhancing the capacities of healthcare systems and the health of people of the country including the NE region. Under the NHM, two sub-missions operate: The two main included schemes are: the National Rural Health Mission (NRHM) and the National Urban Health Mission (NUHM). The NRHM aims at development of health facility in rural areas, this has been of great importance in the states of Assam, Manipur and Meghalaya. By the support of NHM, new health centre has contributed the employment of health care workers and the enhancement of health care facilities. The emphasis has also been on the aspects of maternal and child; thus, there has been improved immunisation and decreased maternal mortality figures.

2. Pradhan Mantri Jan Arogya Yojana (PMJAY).

Ayushman Bharat scheme started in 2018 and attempt to cover all health expenses of a family with the limit of INR 5 lakh per annum. The scheme comprises the Health and Wellness Centres (HWCs) to offer primary healthcare services and the Pradhan Mantri Jan Arogya Yojana (PMJAY) offering health insurance protection to a targeted population from expensive hospitalisation. PMJAY have benefitted many families in Northeast India including the states of Assam and Tripura which was earlier could not afford to pay the treatment cost. Nevertheless, it is hard to implement Ayushman Bharat efficiently in some regions because the healthcare sector is not well developed, and people often have no idea about the programme.

3. NHID is a body of Northeast Health.

The DoNER in partnership with the MoHFW has been focusing towards enhancement and augmentation of the healthcare facilities in the region of North East India. Additional resources are set apart to remodel health institutions, to set up new hospitals, and to enhance medical schools in the region. The North East Special Infrastructure Development Scheme (NESIDS) is also used in funding related to health infrastructure development tasks like up gradation of district hospital and connecting to the remote health care centres.

4. National Rural Health Mission (NRHM) and Mobile Medical Unit (MMU).

The National Rural Health Mission (NRHM) of the NHM has played an instrumental role in narrowing the rural health care access. Mobile Medical Units (MMUs) are vehicles that have been sent to the northeastern parts of the country to help treat patients in regions that do not have one form of health facility or another. These mobile units can do diagnosis, initial management and referral of patients then they can follow up on them and that will help those in the rural areas and other remote places if the get mobile clinics to get treatment. These units

have proved very useful for states such as Mizoram and Arunachal which has seen improve maternal and child health care .

5. Telemedicine Initiatives

Due to the geographical barriers of the region, telemedicine has of recent being adopted as a major strategy in tackling challenges to quality health care. The eSanjeevani telemedicine platform which has been launched by the Government of India helps in getting remote consultation services; this has its advantage especially in the hilly states; like Nagaland and Arunachal Pradesh. But lacking of constant link with internet as well as low literacy rate in the use of the internet, the effectiveness of the telemedicine has been facing more challenges and there is still much room for improvement in this aspect such as improving the connexion and raising the awareness of people towards the digital healthcare.

6. Accredited Social Health Activists.

The community health intervention through the National Rural Health Mission (NHM) has been strengthened through the ASHA programme. They act as link persons between the community and the biomedical health institutions in specific areas to facilitate health promotion with emphasis on maternal and child health, immunisation and health promotion. In Northeast India ASHAs have been effective in creating health promotion and demand for healthcare services among the rural populace. They are found highly relevant in enhancing MCH status of the population through encouraging institutional deliveries and periodic health cheque up.

Recommendations for Improvement

To respond to these healthcare problems in the healthcare facilities of Northeast India, it is possible to leverage an integrative approach, which centres on special focus on geographic characteristics, cultural and economic differences of the region. Based on the current state of healthcare facilities and government initiatives, the following recommendations are proposed for improving healthcare distribution and access in the region:

1. Building up the Healthcare System

Present healthcare system in Northeast India is comparatively inadequate especially in the rural farming and semi-arid zones. More needs to be done for construction of new PHCs, CHCs and sub-centres. Further, effort should be made to enhance healthcare infrastructure in the additional districts comprising Arunachal Pradesh, Nagaland, and Mizoram, where inequalities are defined higher. The government should also expand the existing health centres with requires items and structures including diagnosis tools, effective maters for women, and emergency units to make the existing health facilities all round and capable of offering various health services.

2. Enhanced and Realignment of Communications as well as Transport Systems

The fifth and last is difficult road network; this is another factor, which hinders timely access to health care. The government needs to focus on infrastructure creation under various Special

Projects like the North East Special Infrastructure Development Scheme (NESIDS) to provide all-weather roads connecting the far flung areas definitely to the health centres. Moreover, expansion of MMUs might also provide reply on search and access to health care services to the most remote zones. Such MMUs should be well endowed and manned to offer both promotive and corrective heath care during the monsoon period when many an area is off reached.

3. Telemedicine and digital health services warranty increase

Telemedicine has the potential of solving the problem of geographic limitation of healthcare in the Northeast. The government should also fund the strengthening of the existing technologies in the information technology sector such as; Internet bandwidth, and mobile network services in the rural areas. To increase the accessibility of the services as only a restricted set of people is able to use the services which are being provided through the eSanjeevani telemedicine platform, authorities should look out for ways to spread the eSanjeevani application to a much larger population and conduct awareness programmes to educate the common man on how they can utilise these services. Engaging with local internet service providers and deploying the currently unavailable, yet relatively cheap, satellite Internet could give the needed digital boost to telehealth in the region.

4. This paper focuses on Recruitment and Retention of Healthcare Professionals.

Lack of adequate number of health care providers more so in the rural regions requires policies that will attract and train staff producers. The government needs to provide proper motivating factors such as special allowances for hardship and accommodation facilities for health professionals to furnish the regional health facilities. It is only possible to build new medical and nursing colleges under the schemes such as Pradhan Mantri Swasthya Suraksha Yojana (PMSSY), which can generate particular health human resources in the region. Health care worker recruitment from within the same region can also be advisable because such people are willing to work in their local health facilities and have knowledge of local culture and languages.

5. Enhancing the ANM/ASHA and Other frontend health worker cadre

ASHA and CHW are the most important figures in the healthcare system of rural area of Northeast India. More of them should be made available and occasionally trained on how to improve the variety of ways through which health care can be accessed. Simplified, one could suggest that ASHAs should be provided with better equipment, such as a health kit, sufficient for basic diagnosis which would help them serve a host of other health related demands. Better timerly enticements and benefits, skill development sessions and increasing their area of operation to include such things as mental health and disease preventions are some of the ways in which the healthcare system would be rendered stronger on a base level.

6. Improving sensitise and creating trust with the community.

This masks many healthcare problems in Northeast India owing to lack of knowledge, and other cultural practises that discourage the use of services. The government and NGOs should work plan for the health awareness programmes, which includes preventive health measures, maternal health and immunisation. Information for these campaigns should be culturally appropriate within these areas whereby the information is given in the local language and embraced by the community. The purpose of engaging community with an aim of solidary by involving leaders in the spread of the awareness can help in reducing unethical attitude of the public towards government's health care services.

Conclusion

Healthcare distribution in northeastern states of India is a highly sensitive subject due to topographical barriers, demographic and economic disparities. However, analysing the government arrangements made by both the central and state authorities it is possible to state that the existing difference in the healthcare accessibility in large cities and rural or remote regions still remains high. The existing health care system is very poor and there are very few accredited health care centres, the transportation is also not good, there are very few health care givers, people do not understand government health facilities and do not use them when they are available. Cultural and socio-economic barriers compound these challenges, which hinders people in the developed world who live in the remote areas to access and utilise the available health care services.

Some improvement has been achieved by the Indian governments through the launch of policies like National Health Mission (NHM), Ayushman Bharat, and use of Accredited Social Health Activist (ASHA). Nevertheless, the practical application of these measures is hampered by organisational and instrumental barriers, inadequate financing, and the absence of cooperation between different actors.

The need to enhance and develop the distribution of HC in Northeast India requires an integrated and GIS-based strategy. Expanding coverage will require improved physical, transport, and digital networks, as well as better incentives for training, attracting, and retaining health staff. Telemedicine, MMS, and outreach clinics may address geographical barriers, whereas culture appropriate awareness creation will curb barriers related to healthcare seeking. Other sources of funding and capacity can also be tapped from NGO and public private partnership which would further improve the HC in areas which are underserved.

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