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## Health Infrastructure in India during Disaster: An Analysis

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### ABSTRACT

Health infrastructure is an important guide for merchandising fitness care coverage and welfare mechanism within the country. It places emphasis upon making provision of health care facilities throughout the country. Infrastructure has been described as the basic provision for the shipping of public health activities in a productive and significant manner. The Five elements of health infrastructure are, knowledgeable workforce, integrated digital facts systems, public fitness organizations, sources and research. When the persons are paying attention closer to the development of health infrastructure, the need to center of attention upon the improvement of these elements as well. One of the necessary factors is, in clinical and fitness care centres, the troubles and deficits want to be identified. When these are identified, measures want to be formulated to carry about improvements. Furthermore, there is a want to make use of modern, scientific and progressive methods in bringing about developments in health infrastructure. Developments in fitness infrastructure will render a giant contribution in promotion fitness and well-being of all individuals, irrespective of age groups, communities, categories and backgrounds. The primary areas that want to be taken into account in this research paper are, meaning and magnitude of fitness

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infrastructure, understanding features of health infrastructure and areas of health infrastructure where improvements want to take place. In addition to responding to disasters, health Infrastructure also play an important role in preventing and mitigating the impact of disaster. Health systems must be able to anticipate and plan for potential disaster and developed strategies to reduce their impact. Healthcare resilience is a country capacity to prevent, surveill, respond to, recover from shocks, stresses and adversity. Strategy and World Government Summit have developed an evidence based tool to score a countries Heathcare resilience. To build healthcare resilience, government need to identify their countries exposure to hazards, their vulnerabilities and their response capabilities.

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## INTRODUCTION

Health is wealth. Even our Vedas stated “Pehla Sukh Nirogi Kaya”. No country can development till its humans are pleased and healthy. Happy and healthful residents are real wealth of a country to development upon. Needless to say, that poor, sick, ill, addict and unhealthy people are a legal responsibility to a kingdom and they swallow a excellent component of its GDP in the structure of fitness care. According to World Development Report 1993 (WB, 1993) “Improved fitness contributes to monetary increase in four ways. It reduces manufacturing losses prompted by using employee illness, it permits the use of herbal resources that had been definitely or almost inaccessible because of diseases, it will increase the enrolment of adolescents in schools and makes them better in a position to analyze and it frees choice makes use of resources that would in any other case have to be spent on treating illness.”

The economic features are especially higher for poor people, who spend and go through a lot due to their ill-health and unfastened productive days as well as spend a lot to deal with illness. For e.g. It has been estimated that 62.6% (HT, India's Health Spending, 2017) of prices on healthcare in India are out of pocket expenditure however government expenditure is solely 1.4% (Sharma N. C., 2019) of GDP which is an awful lot decrease than the global common of 6%. The government is spending simply Rs. 1,112 per capita for fitness care which capacity solely Rs. 3 per day is spent for the fitness care of an average Indian. (NHP, 2018) This places India even lower than countries like Bhutan, Sri Lanka and Nepal who spend 2.5 1.6, and 1.1 of their GDP on health care. Due to lack of health care services about 10 lakh humans lose their lifestyles before time (DJ, 2018). Approximately 7% of population annually plunges



below poverty line due to fitness care costs. (Khandheria, 2018) But earlier than coming to health care infrastructure of India let us come to the basics first. What do we mean by fitness or health care etc. Health is not only lack of illness or absence of disease but according to WHO (Callahan, 1973) - "Health is a state of complete physical, mental and social well-being and not merely the absence of disease." According to Oxford dictionary "It is soundness of body and mind that condition in which its functions are duly and efficiently discharged."

## **LITERATURE REVIEW**

Pradeep Kr. Chaudhary (choudhury, 2018) in his paper raises questions on the difficulty of personal quarter involvement in medical education, the regional variants in the health care offerings and availability of doctors. It analyses position of personal region in providing scientific education, unequal distribution of scientific schools and great of clinical graduates produced from private establishments and suggests the government to correct the geographical imbalances through placing up scientific institutions in underserved regions. Shailendra Kumar (Kumar S. , 2016) in his working paper sincerely explained How public fitness care services failed to furnish fitness for all and non-public quarter was once promoted and even facilitated to provide fitness care services to humans but failed due to base on profitability, hence created basically inequality and misallocation in spreading of infrastructure amenities in all areas.

## **OBJECTIVE OF THE STUDY**

1. To assess the health Infrastructure of India.
2. To find out how resilient Indian Health Infrastructure are during disaster.
3. To give suggestions to improve Health Infrastructure in India.

## **RESEARCH METHODOLOGY**

This study is based totally on secondary data. It makes use of analytical and descriptive approach to find misallocation in fitness care infrastructure of India through different research papers, articles, specific fitness reports published via Indian government and world organizations as WHO, World Bank, Newspaper article etc. Data from unique sources have been culled, analyzed and conclusions drawn.

*Health Infrastructure*



The economic survey 2022-23 termed public health Infrastructure as ' the nerve centre of the public health system' , forming the fundamental support gadget for the last-mile transport of public health services. Healthcare infrastructure has been mentioned as an necessary indicator for perception the healthcare delivery provisions and welfare mechanisms in a country. The need for strong environment friendly healthcare infrastructure was once felt when the country was grappling with surge in COVID-19 cases and was once facing shortage of ventilators, clinic beds and oxygen cylinders. As the Indian authorities is ensuring general healthcare for all, the fast-changing population demographics and its implications on the healthcare gadget stays a motive for concern. India has an giant healthcare infrastructure, however, many variations stay in fantastic between rural and city areas, as well as between authorities and private healthcare. While the National (Rural) Health Mission has accomplished a lot to enhance the infrastructure of India's government-run healthcare system, many primary healthcare centres (PHCs) lack primary infrastructural amenities like beds, rooms, toilets, and drinking water facilities, easy labour rooms to supply babies, and electrical energy normally (Kasthuri, 2018). According to the Rural Health Statistics from MoHFW 2021, there are a complete of 5439 PHCs in the urban areas and of 3966 PHCs in the tribal areas as on 31st March 2021.

The latest NITI Aayog report 2021 titled 'Reimagining Healthcare in India via Blended Finance' highlighted that 50 per cent of India's populace has get admission to to 35 per cent of health facility beds, as a consequence indicating a sturdy want to improve healthcare infrastructure to make sure access to healthcare facilities for all.

### *Problems in the health Infrastructure*

1. Lack of Human Resources :- According to the Ministry of Health & Family Welfare (MoHFW) in early May, the Rural Health Statistics (2020-2021) show a rise in the alarming shortage of specialists in Community Health Centres (CHCs) in rural areas. In 2021, CHCs in rural areas reported a shortage of a whopping 79.9% in the number of specialists compared to a shortage of 76.2% in 2020. In 2021, there was a shortfall of 83.2% of surgeons, 74.2% of obstetricians & gynaecologists, 82.2% of physicians and 80.6% of paediatricians in 5,481 CHCs in rural areas. Taken together, the CHCs in rural and urban areas reported a shortage of 76.2% in the number of specialists required in 2021 (same as 2020).

2. Inadequate Physical Infrastructure :- The state of health infrastructure is even extra worrisome, the document highlighted. The variety of beds in Sub-Divisional/District Hospitals and District Hospitals in the u . s . elevated by a meagre 0.5% in 2021. Only 34.2% PHCs function 24\*7 in rural areas, while only 34.7% have an operation theatre. Only 72.4% PHCs and 78.6 CHCs in rural areas have a labour room.



Only 67.2% CHCs (the easiest healthcare facility in the three-tier rural healthcare facility) have a useful stabilization unit for newborns. The shortfall in the variety of radiographers in CHCs in rural and urban areas additionally increased from 54.5% in 2020 to 58% in 2021. The shortage in other areas is also a ways from over. In 2021, there was a scarcity of 15.9% pharmacists, 24.9% laboratory technicians and 8.3% nursing group of workers in Primary Health Centres (PHCs) and CHCs.

### *Suggestions to improve the condition of health infrastructure*

India does have a systematic health policy. What want to be finished are its effective implementation, monitoring and evaluation for promoting holistic health and monetary welfare of the people. The following suggestions are made to enhance the fitness of the health infrastructure

#### 1. Creating new infrastructure and strengthening existing infrastructure :-

The availability and accessibility of properly fantastic health-care offerings want to be extended to larger population. In the lengthy run, new infrastructure (hospitals and vital equipments in the hospital) need to be created to make nice offerings reachable to a larger populace and wider area. It is feasible to restructure and rationalise the present health care institutions to improve their carrier shipping and decorate outreach in the brief run. Besides creating new infrastructure existing fitness infrastructure have to be strengthened with appropriate infrastructures like beds, laboratories, ambulances, telephones, medicines etc

#### 2. Refocus on government expenditure :-

A important chunk of the resources wishes to be deployed for improvement of health infrastructure and amenities. Government expenditure should cowl both healthcares for the poor and fitness merchandising and disease prevention for all. There have to be a shift from the current emphasis on curative, superior and urban offerings to amplify funding for preventive services and higher services in the rural areas. Government expenditure on healthcare services should be increased and spread across areas based on the precept of 'equity'.

#### 3. Filling up the vacant posts :-

Vacant posts have to be stuffed up with the qualitative staff. If a state finds it difficult to fill up vacant expert positions in hospitals simple scientific graduates need to be recruited so that the people get at least minimal services. Convenient and trendy residential accommodation needs to be furnished for at least the key team of workers as a motivation for them to remain on so, as to make certain the availability of



services to the people. The mismatch between manpower and infrastructure facilities must be achieved away with so as to decorate efficiency as a whole.

#### 4. Supporting involvement VO/ NGOs :-

Committed and reputed NGO's may additionally be concerned in the improvement of foremost healthcare device by using handing over certain share of infrastructural amenities particularly SC or PHC along with constructing , cash and body of workers with distinctly extra management freedom to VO/NGOs depending upon their functionality of funds, group of workers etc, after ascertaining their credibility. Initiatives in fitness care with the aid of non-public quarter and NGOs can be motivated through fabulous tax breaks and other healthful incentives.

#### 5. Constructing of buildings in ideal location for hospitals and staff :-

There is an pressing need to provide ample buildings for hospitals to furnish good services. Besides the development building for hospitals, houses for the group of workers need to be constructed to extend the morale and efficiency of the personnel working there. While opening a new healthcentre care may be taken in choosing such a website which should be without problems reachable to largest number of human beings in the block .

#### 6. Proper supply of drugs and other health equipments :-

Steps may be taken to ensure adequate and timely supply of medicines and equipment to health centres. They should maintain adequate stock of drugs. For efficient discharge of curative functions the health centres should be provided sufficient equipments like x-ray and laboratory facilities oxygen cylinders, operation tables, indoor beds and surgical instruments etc .

#### *How resilient our Health Infrastructure are?*

The approach to disaster-resilient infrastructure is a complex thinking involving cross-disciplinary initiatives. Thus, it is quintessential to amalgamate science, policy, and politics to formulate a framework that addresses vulnerability and enhances the adaptive capacity. Since the occurrences of herbal failures have linkages to local weather change, it is necessary to undertake superb catastrophe resilience measures. Resilient health systems are able to shield themselves and human lives from the public fitness have an effect on of disasters and are fundamental to accomplishing correct fitness consequences before, during, and after mess ups . To understand the resiliency of Indian Healthcare infrastructure we are taking hospital case studies for various type of disaster -



18 patients died between December 2 and 3 2015 at the MIOT international in Manapakkam in Chennai , after the health center was flooded owing to the Adyar breaching its bank tearing through the sanatorium compound wall and unfavorable its power units .

To address the above concern government took several initiatives - 25 September 2019: The Prime Minister of India, Narendra Modi, launched the Coalition for Disaster-Resilient Infrastructure (CDRI) at the UN Secretary-General's Climate Action Summit in New York, US. The fledgling partnership has a secretariat in Delhi, supported via the UN Office for Disaster Risk Reduction (UNDRR), to allow expertise exchange, technical assist and ability building.

WHO seven policy recommendations on building resilient health system based on primary healthcare are :-

1. Leverage the current response to reinforce both pandemic preparedness and health systems
2. Invest in essential public fitness features which include these wanted for all-hazards emergency threat management
3. Build a strong primary fitness care foundation
4. Invest in institutionalized mechanisms for whole-of-society engagement
5. Create and promote enabling environments for research, innovation and learning
6. Increase home and international funding in fitness system foundations and all-hazards emergency chance management
7. Address pre-existing inequities and the disproportionate affect of COVID-19 on marginalized and susceptible populations

#### *Significance of Resilient Health Infrastructure in Disaster Mitigation -*

The Tribhuvan University educating hospital in Kathmandu is a reference health center for complete country. The tribhuvan teaching medical institution was once constructed in 1984 with the support of Japan International Cooperation Agency (JICA) with Japanese earthquake resistance requirements . With the ability of 444 beds the clinic is the greatest in the Nepal and units the requirements for which different sanatorium in the state intention to achieve. After the 2015 earthquake the hospital staff medical attention to the victims with instant admission and operation theatre walking within two hours.

#### **CONCLUSION**

Making hospitals extra resilient for future disasters is particularly an necessary requirement for hospitals positioned in a disaster prone area. Hospital sketch be strong and organized to be without delay



transformed from a every day situation in a health center that is capable of managing disaster situations. A sanatorium staring at recreation is an experiential mastering and a key device to decorate understanding on catastrophe management that can be used as an instrument that will enable hospitals to measure their level of resilience . This pastime will beautify the visual and analytical skills of hospital personnel that will assist generate modern moves to increase the resilience of the hospital. Observation carried out by way of the health facility team of workers will spotlight the vulnerability to hazards in one of a kind areas round the health center and be increased where necessary. At the equal time, the health facility staff will pick out health center physical and built environment that can be of use at some point of a disaster. In addition, a resilient hospital would now not be complete with clinic looking at things to do alone, but it ought to be mixed with lectures, ride sharing by the hospital group of workers and simulation workout routines to empower proper health facility preparation, bodily aspect and constructed environment of the hospital.

## REFERENCES

- Kumar , A., & Gupta, S. (2012). Health Infrastructure in India: Critical Analysis of Policy Gaps in Indian Healthcare Delivery. Vivekananda International Foundation. Retrieved June 25, 2020 from viridian.org .
- Vij Dimpal (March 2019) , "Health Infrastructure in India: Need for Reallocation and Regulation". Regulation".[https://www.researchgate.net/publication/342170461Heath\\_Infrastructure\\_in\\_India\\_Need\\_for\\_Reallocation\\_and\\_Regulation](https://www.researchgate.net/publication/342170461Heath_Infrastructure_in_India_Need_for_Reallocation_and_Regulation) .
- Alexender, A. (2018, December 7). Health Programmes need community engagement. 16. Hindustan Times. 2. Callahan, d. (1973). The WHO Definition of Health. 1(3) 77-78. The Hastings Center.
- choudhury, P. K. (2018, December). Private sector in Medical Education and Human Resource development for Health in India: Understanding the Regional Variations. 41(special), 60-77. Hyderabad: Institute of Public Enterprise .
- Kumar, S. (2016). Health in the ear of Neoliberalism: A journey from state provisioning to fianacialization. New Delhi: ISID, working Paper 196.
- Jain, Pallavi (2022). "Why Healthcare Infrastructure in India needs more attention" in Express Healthcare, Sept 12, 2022 .
- 7.<https://www.frontiersin.org/articles/10.3389/fpubh.2017.00263> .
- 8.<https://sdg.iisd.org/news/india-launches-global-coalition-for-disaster-resilient-infrastructure/> .



- 9. <https://www-orfonline-org.cdn.ampproject.org/v/s/www.orfonline.org/expert-speak/disaster-resilient-infrastructure-governance-and-public-health> .
- 10. The Rural Health Statistics (2020 - 2021) report of Ministry of Health and Family Welfare.
- 11. GOI (2023) , Economic Survey of India 2022 -23 .
- 12. Bhatt Kiran... , Inamdar Aniruddha..., Pattanshetty Sanjay... , D'Souza Voila Savy....(2023) Disaster Resilient Infrastructure governance and public health : The role of international community.
- 13. Niti Aayog (2020) " Vision 2035: Public Health Surveillance in India ", available at <https://www.niti.gov.in>
- 14. Hati, Kumar Koushik, Majumder, Rajarshi (2013) , "Health Infrastructure, Health Outcome and Economic Wellbeing: A District Level Study in India" , Oct 2013