2026 Volume: 02 Issue: 04 www.ijrpa.com ISSN 2456-9995 Case Study

International Journal Research Publication Analysis

Page: 01-46

HEALTH FACILITIES PROVIDED BY THE GOVERNMENT IN URBAN AND RURAL AREAS: A COMPARATIVE STUDY

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Article Received: 21 March 2026
Article Revised: 11 April 2026
Published on: 01 May2026

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DOI: https://doi-doi.org/101555/ijrpa.3389

ABSTRACT

Health is essential for personal happiness, productivity, and fulfilment. It affects physical well-being, mental health, longevity, academic and professional success, and relationships. Good health lowers healthcare costs, supports economic growth, and enhances community well-being. This paper looks at the state of the healthcare system in rural and urban India. It reviews existing research and gathers data from rural and urban hospitals. It also examines efforts by the Indian government and other organizations, such as Ayushman Bharat, which aims to strengthen primary healthcare and protect vulnerable populations. Addressing these complex issues requires ongoing efforts, adequate funding, and proactive steps in healthcare infrastructure, workforce development, and policy changes. The data presented highlights the ongoing challenges and also the ratio of the benefiters in rural and urban areas and shows the urgent need for proper treatment and care. Like the ratio of Minor and Adults in rural area benefitted from National Health Mission is 2:3 and in Urban areas, the ratio is 1:1.7. By

focusing on these aspects, the healthcare landscape in rural and urban India can improve and lead to better health outcomes for its residents. This paper discusses the problems and solutions observed during visits to hospitals and families in rural-urban north central India. Research findings highlight the importance of using supply chain strategies to improve healthcare delivery. It concludes requirements for improvement, along with several data findings, can save many lives in rural areas by ensuring timely access to healthcare solutions.

KEYWORDS: Healthcare system, Government schemes, urban areas, Rural areas.

1. INTRODUCTION

Healthcare is one of the most important things for human development. It affects the quality of life, how productive people are, and how happy they feel. In India, the government is very important in making sure people get healthcare that is affordable, easy to get, and fair for everyone. About 65% of people live in rural areas, so it's very important to have special plans that work for both rural and city areas. The access to healthcare can be different from one country to another, from one community to another, and even from one person to another. This is because of different social and economic situations and the health policies in place. Getting good healthcare means using the right health services on time to get the best results for health. Factors that can stop people from getting healthcare include money problems like not having insurance, difficulty reaching a healthcare centre because of transport or not being able to take time off work, cultural beliefs, and personal issues like not understanding health information or not having enough money. These barriers can make it harder for people to get the medical help they need, which can lead to worse treatment outcomes and even death (Jaysashree,2022).

A good healthcare system can help a country grow economically and develop. Health is important not just for the body but also for the mind. One big success story is the global effort to end smallpox in 1980, as declared by the WHO. This was the first disease in history to be completely wiped out through healthcare efforts (WHO, 2008).

Healthcare is about helping people stay healthy by preventing, finding out, treating, and managing different health problems like illnesses, accidents, and mental issues. Doctors, nurses, dentists, pharmacists, midwives, and other professionals help with this. It covers a wide range of jobs, including medicine, dentistry, pharmacy, and others in areas like primary care, secondary care, tertiary care, and public health (Billings J. *et al.*,1993).

Healthcare planning usually happens gradually rather than suddenly. Like any social system, healthcare systems show the history, culture, and economy of the places they are in. These differences make it hard to compare healthcare systems across countries and stop the making of a global standard for performance (Shi L. *et al.*, 2002).

In India, the healthcare system has three main levels. The first level gives basic health services, helps stop diseases, looks after pregnant women and children, and provides vaccinations through places like Sub-Centres, Primary Health Centres in rural areas, and Urban Primary Health Centres in cities. The second level offers more advanced care, such as seeing a doctor, staying in the hospital, and small surgeries through Community Health Centres, district hospitals, and Urban Community Health Centres. The third level deals with very special treatments at big hospitals, medical colleges, and places like AIIMS. Access to healthcare can be different because of various factors like social and economic conditions and health policies. Healthcare services are meant to help people get the right care at the right time for the best health results. Important things that make it hard to get care include money problems, difficulty reaching a place, not having time off work, cultural factors, and personal issues like poor communication with healthcare providers, not knowing enough about health, and low income. These problems can affect how much care people get, how effective the treatment is, and overall health and life expectancy (Balarajan Y. *et al.*, 2011).

Primary Health Care (PHC) means essential health care that uses scientifically correct and socially accepted methods and techniques. This approach makes sure that everyone in a community can get healthcare that is affordable. PHC encourages the whole community to be involved in making decisions and carrying out health programs. The services are offered in a way that a community and a country can afford at each stage of development. In fact, PHC goes beyond just treating health issues to promote fairness and equality in health through social policies. It looks at all aspects of health, including access to care, the environment, and lifestyle. So, primary healthcare and public health are seen as the base of any universal health system. In some countries, health system planning is shared between different groups. Governments, workers' unions, charities, religious groups, and other coordinated organizations work together to give planned healthcare to their communities (Laditka J.N. *et al.*,2009).

In short, a health system includes all groups, people, and activities that work to improve, restore, or keep people healthy. This covers efforts to change factors that affect health and actions that help improve health. A health system isn't just about public hospitals providing medical care. It also includes things like a mother taking care of a child who is sick at home,

private healthcare providers, programs that change unhealthy behaviours, efforts to control disease-carrying insects, health insurance companies, and rules that protect workers' health and safety. Health workers often work with other sectors, such as pushing for better education for women, which is known to improve health (Patil V.P., *et al.*, 2002).

This project tries to connect what is taught with what is done in real life by talking to communities through surveys, visits, and interviews. It looks at how aware people are of government health services, how easy it is for them to get these services, and how they use them. It also compares how healthcare is set up, how good the services are, and how well they work in rural areas versus urban areas (Subramanian S.V., 2006).

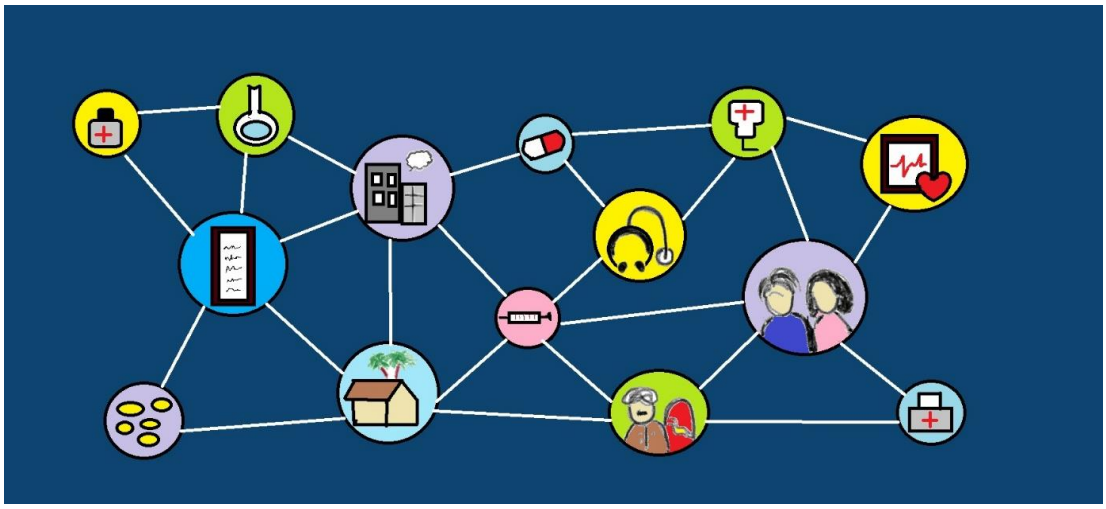


Fig. 1: The healthcare system provided by government in Rural and Urban areas.

Source: (Created by author)

This image shows an idea of a connected healthcare system that brings together different parts of the medical world, like hospitals, clinics, doctors, patients, medicines, patient records, and tools used for testing. When talking about healthcare in cities and villages, it shows how important it is to build a single, connected health system that connects the services people get in big cities with those in smaller, rural areas.

In cities, healthcare is usually better with modern equipment, expert doctors, and good systems for keeping track of medical information.

But in rural areas, there might be fewer doctors, not enough medicines, and less access to new technology. The connected system in the image shows how digital health tools, like video calls with doctors, sharing medical records online, talking to doctors through the internet, and checking on patients from a distance, can help fix these problems.

With this kind of connection, people in remote areas can see doctors in big cities quickly, get the right treatments, and share their health information easily.

It also helps make sure that medicines and supplies reach where they're needed. It supports workers in small clinics and helps keep people healthy by providing information and monitoring their health.

In short, this image shows a future where technology links cities and villages, making sure everyone, no matter where they live, can get good healthcare.

1.1 Need for study

Exploring the rural and urban healthcare system is indispensable in understanding the unique challenges, improving access to healthcare, addressing health disparities, and enhancing healthcare delivery models. Rural populations encounter different kinds of challenges like limited access to health facilities, lack of doctors and other healthcare professionals, and transportation difficulties due to their low income among other factors. Researchers may uncover the barriers deterring access and come up with innovative solutions to improve healthcare, e.g. telemedicine, mobile clinics, community health workers, and policy changes. Rural and urban health studies help to identify the causes of disparities and facilitate the respective interventions. Research on the healthcare system has implications for policy and decision-making. This investigation will point out the real issues that come with incorporating supply chain management in rural and urban healthcare and at the same time provide suggestions for possible solutions.

1.2 Research Objectives

Medical professionals consulted and research papers reviewed revealed the essential problems that need to be looked into when considering rural and urban healthcare system. The elements involved are access to healthcare, utilisation of healthcare, health outcomes, disparities, delivery models, workforce development, health policy interventions, economic implications and developing interventions. Analysis of workforce development and recruitment is important for targeted interventions, improving access, quality of care and promoting effective healthcare delivery models in rural areas. Last but not least, the research objectives are outlined as follows:

1. To look at how available government health services are in city areas compared to village areas.
2. To check how good the healthcare services are in cities and villages.
3. To understand how people in urban and rural areas use government health centres.

4. To find out the problems and difficulties in providing public health services in rural and urban areas.
5. To see how government programs like NHM, Ayushman Bharat, and NUHM have helped improve health facilities.
6. To find out what policies are needed to reduce differences and make healthcare fairer and more accessible for everyone.

2. LITERATURE REVIEW

2.1 Infrastructure and Accessibility

Facility Density and Distribution

The government healthcare infrastructure distribution remains inherently conceptualized with a focus on population patterns, which remain vastly different in rural, compared to conventional urban, areas in a manner that reflects a classification scheme of healthcare delivery. On a separate note, in rural areas, this delivery model remains a bottom-up affair with a Sub-Centre being most in line with a Point of Percolation, with a normal population of 5,000 in plain area, 3,000 in difficult/hilly area, followed by a Primary Health Centre which covers a population of 20,000-30,000, and finally a Community Health Centre with a population of 80,000-1, 20,000, which remains a conceptual referential as a First Referral Unit.

Nonetheless, in practical situations, there remains a huge shortage of such healthcare infrastructure needed for even meeting the norm stipulations, especially in relation to a shortage of CHCs, which remain a referral point for healthcare delivery, with a requisite that takes care of a long distance that ailing patients from rural areas are faced with, in order to avail themselves of specialized healthcare support beyond mere primary needs. This becomes particularly reflective, since though 65-70% of population remains in rural areas, this area provides only around 37% of total hospitals.

Nonetheless, in a separate note, in Urban areas, this delivery model remains in a manner that follows care through Urban Primary Health Centres, which in practical situations remains as care for a rather densely populated area of 30,000-50,000, along with their high-density geographic distribution of specialized care District Hospitals, in a manner that remains grossly overrepresented in, and around, major metropolitan areas.

2.2 Physical Infrastructure Quality

The "Physical Infrastructure Quality in government healthcare facilities" reflects large differences in government healthcare facilities, which in turn influence care quality and

perception. While "Urban healthcare institutions, particularly Tertiary Care Hospitals and established District Hospitals, are likely to function from modern, multi-level buildings, be better maintained, and provide assured access to support services like air-conditioned spaces in specialized blocks, functional generators and UPS, piped water supply, and functional sanitation." These are "generally in a better position to comply with, or even exceed, Indian Public Health Standards in matters of building design and patient comfort."

The reverse holds true for "rural healthcare facilities, particularly PHCs and CHCs, where major infrastructure issues are common. Many government buildings in the healthcare sector are either of an old design, ill-maintained, or even partially constructed, putting these institutions in suboptimal, dilapidated, conditions. A major shortage of infrastructure relates to a lack of assured access to electricity and piped water supply for healthcare delivery, which greatly adds to issues like inadequate use of healthcare technology, low hygiene, and a severe shortage of "staff quarters, which are a vital factor for retaining physicians in long-term posting in the rural area. Overall, this substandard physical infrastructure in healthcare delivery in rural areas not only adversely affects hospital hygiene and safety but also indirectly affects patient care as many, especially those requiring complex care, bypass these institutions to present themselves to private and government setups in major, usually distant, cities, incurring additional out-of-pocket costs for those in a vulnerable, disadvantaged, position and in a glaring manifestation of lost public trust in healthcare delivery."

2.3 Medical Equipment Availability

The matter of Medical Equipment Availability represents a major divide between government facilities in urban and rural areas, being a prime determinant for providing quality care in a remote setting. Entering Urban Government Hospitals—District Hospitals and Tertiary Care Centres—where hi-tech, sophisticated, and costly equipment is available. These also consist of a range of contemporary diagnostic facilities as per IPHS specifications, like:

•CT scans

•MRI Scanners

•Advanced Ultrasound Scanners

•Functional Ventilators

•Functional Blood Banks, though deficiency in functionality and inoperability due to lack of personnel has also been reported.

On the other hand, the situation in rural healthcare institutions, especially Primary Health Centres (PHCs) and Community Health Centres (CHCs), is that of a severe shortage even of basic equipment. There are many PHCs that lack basic diagnostic equipment like working X-

ray machines, pathology laboratories for conducting simple blood and urine tests, and equipment needed for safely conducting institutional deliveries. Although CHCs are supposed to be First Referral Units (FRUs) that should have facilities like X-ray, basic surgical sets, and others, many of these institutions fall short of this, due to issues like purchasing, lack of steady electricity supply that can hamper their functionality, as well as a lack of biomedical engineers and qualified technicians for setting up, maintaining, and repairing these.

Simply put, their poor availability and rate of dysfunction, which has been allegedly estimated to be as high as 35% for life-saving equipment in certain sources, means that country folk find themselves needing long journeys to diagnostic centres in urban areas, which, despite being expensive, are much needed for a healthcare system meant to be free.

2.4 Geographical Barriers and Travel Time

The factors of Geographical Barriers and Times of Travel form a sustaining gap between government healthcare accesses in a rural setting as opposed to that in an urban setting. In an urban setting, even though distance to healthcare facilities would be small due to their widespread nature, a barrier in this case would exist in traffic conditions as well as multi-model transport systems, including use of autos, buses, or metro, which, in spite of small distances, cause substantial travel time as well as costs, particularly in distant slums. Again, in this setting, however, it would be mostly the latter group—that of people in rural areas—that would face problems in distance as well as facility distribution, in that people would be required to cover long distances of over 20-100 kilometres in some cases, in search of a specialist physicians in a secondary healthcare setting, a phenomenon known as "Distance-Descend Effect."

Consequently, this would lead to further fall-off in government healthcare facility use as measured by distance, which would form a substantial barrier; this would, in turn, be further worsened by absent as well as rough road conditions in such areas, lack of public transport, and other difficult terrain in some cases, which would make a 20-kilometer distance take several hours, particularly when a healthcare emergency arises, like deliveries.

Also, with healthcare emergency situations, particularly in a setting where percent of population would lack access to even a generator set in a healthcare facility, it would, in a developing world setting like India, make most people in such groups take substantial amounts of delay in searching for healthcare, which would develop into a "life-threatening situations" due to lack of access, as a consequence of which an individual would face further enhanced Maternal and Infant mortality rates in a healthcare setting as opposed to their urban counterparts.

2.5 Referral System Effectiveness

The Referral System Effectiveness plays an important role in determining healthcare quality, and it operates in a completely different and fragmented manner in a planned, structured setting like an urban area and in a struggling setup like a rural area. On paper, it operates as a continuous flow: patients are initially brought into care from the most peripheral point of entry care (SC/PHC/UPHC) and are referred to a higher facility than above (CHC, District, or Tertiary) in cases that are beyond being treated in that facility. Also, in an urban setting, a patient referral pathway follows a relatively shorter distance; whereas patients are referred from UPHC for primary healthcare, for specialized care, either direct referral from UPHC takes place, as a high percentage of District/Tertiary Hospitals are specialized.

However, the efficiency has been adversely affected in the rural setting due to various failures in the system. The patients forgo care from the PHCs and CHCs completely, which has been referred to as "self-referral," since there is a lack of trust in the facility, which has been adversely affected due to constant cases of infrastructure issues, lack of equipment, and a lack of specialized physicians in the CHC. This overloads the District Hospitals and Tertiary Care Centres with cases that were meant to be attended to in the community. In addition to this, for those who are referred, there has been a failure in the referral system due to a lack of a good emergency referral transport service in terms of Ambulances available for 108 and 102, particularly from villages to the CHC and District Hospitals.

This lack of mobility in transporting patients, in conjunction with a lack of coordination among facilities as well as a lack of seamless care transition, has meant that there has been a considerable delay, which has meant that there has been a substantial impact on morbidity and mortality related to conditions that were meant to be immediately attended to, thereby making the referrals in the rural area an even series of fragmented activities rather than a continuous process.

2.6 Human Resources and Workforce

Shortage of Specialists

The Shortage of Specialists is a critical and chronic failure in India's public healthcare system, which has become extremely imbalanced and compromises the delivery of secondary care in rural areas. Although the overall national doctor-to-population ratio-including allopathic and AYUSH-might approach global benchmarks in some states, it is very unevenly distributed; around 70% of the specialists are concentrated in urban centres housing only about 30% of the population.This shortage is particularly critical at CHCs in rural India, which are entrusted to act as FRUs that are expected to provide basic specialist services (Surgeon, Physician,

Obstetrician/Gynaecologist, and Paediatrician). Recent government data reveals shocking overall shortfalls, with rural CHCs facing an overall shortfall of approximately 80% of the specialists required to fulfil IPHS norms. There has been a consistent high level of vacancy rates across all the four key specialist roles, sometimes as high as over 75-80% for surgeons and paediatricians in many states.

The reasons for this profound crisis are manifold and include:

- **Lack of Motivation and Unsatisfactory Life**: Specialists are reluctant to transfer to rural areas because of inadequate residential infrastructure (inadequate staff quarters), limited social and educational opportunities for the family, and perceived insecurity.
- **Professional isolation**: the non-availability of essential equipment or qualified paramedical support staff, and dysfunctional referral systems, all contribute to specialists not being able to use their advanced skills, leading to professional dissatisfaction and skill erosion.
- **Income Disparity**: Attractiveness of Private Practice Opportunities in urban areas for a highly trained post-graduate doctor, especially those with incurred costs of private medical education, remains high.

The result is that a large proportion of the rural population has to travel long distances-each way, often up to 50-100 km-and incur high out-of-pocket expenditure to reach such secondary care-such as C-sections, emergency surgeries, or advanced paediatric care-that should be offered nearer to home at the CHC level.

2.7 Retention and Motivation

Retention and Motivation, in this writer's opinion, is potentially the most difficult challenge in Human Resources for a government-based healthcare system, as it establishes whether physicians and specialists that are hired will subsequently remain in their role, especially in rural and remote settings.

Difficulties in Rural Areas: In rural areas, turnover rates are fuelled by a topic of converging hygiene issues of job satisfaction and motivational issues of professional development.

- **Poor Working Conditions**: This would include issues such as those above – deteriorated infrastructure, erratic power/water supply, broken/down equipment, lack of support staff – which would make working frustrating as well as isolating as a professional.
- **Lack of Personal and Family Support**: This is the most important hindering factor that is non-monetary in nature. A lack of commitment from physicians and specialists to

continue working in villages and small towns due to insufficient, secure staff residential accommodations, most importantly, inadequate quality educational institutions for their own family members, including their spouses.

- **Professional Stagnation**: That fewer patients are seen for specialized care, as well as a lack of a professional group to share cases with and provide continuous medical education for in many of the remote CHCs, creates a concern for professional stagnation in relation to their metropolitan area counterparts.
- **Absenteeism and Dual Practice**: Due to lack of motivation and absence of supervision, absenteeism as well as dual practice becomes a norm among doctors, where they perceive their government job as a part-time career, hence further deteriorating government service delivery.
- **Strategies for Improvement (Incentives):** The government has attempted to mitigate these factors by using a range of monetary, regulatory, and non-monetary incentives:
- **Financial Incentives:** This would involve providing hard area allowances or differential salaries to docs working in remote and difficult areas, along with their usual salaries, as well as performance-based incentives in some cases through the National Health Mission.
- **"Regulatory and Educational Incentives"**: The most effective means of retention would be to provide a preferential entry scheme for post-graduate students. A minimum period of, say, three years of service in a remote area would entitle a doctor to: **"Incentive Marks (up to 30%) in NEET-PG entrance exam. 50% reservation in PG Diploma courses."**
- **Non-Monetary and Supportive Incentives:** This involves making their living conditions better through subsidized or providing good-quality housing, security, and support for multi-skilling, which involves training general doctors in life-saving techniques such as Emergency Obstetric Care. However, a key determining factor in shaping the success of Retention and Motivation has to be a move from compulsion, as in the form of obligatory country lengths, to a supportive, stimulus-rich, and economically rewarding environment that renders it feasible for physicians and their spouses to move to rural postings.

2.8 Paramedical and Support Staff

The composition and distribution of Paramedical and Support Staff such as nurses, lab technicians, pharmacists, radiographers, and administrative staff are important for the

functionality of government institutions, as it reflects a major discrepancy between rural and urban areas.

- **Difficulties in Rural Facilities (PHCs & CHCs):** This deficiency in paramedical/support staff has been found to be even more debilitating than a shortage of medical personnel in primary care facilities in rural areas, as these support staff are critically needed for their day-to-day functioning:
- **High Vacancy Rates for Important Posts**: There are high vacancy rates for important posts like laboratory technicians, pharmacists, and radiographers in CHCs and PHCs. This implies that even if there is basic equipment available (like that of an X-ray), it would not be functional as there would be no personnel to run it.
- **Overburdened Nursing Staff**: The nursing staff, as well as Auxiliary Nurse Midwives, are usually a relatively stable lot in a district, but are grossly overburdened as a result of manpower deficiencies in all other categories. This results in their involvement in administration, dispensing, as well as minor lab work, which reduces their efficiency in their important role of patient care, particularly in critical areas like maternal and child health.
- **Low Administrative and Maintenance Support**: This involves a lack of administration personnel, cleaners, and security personnel, which is especially experienced in rural areas. This translates to a lack of proper record-keeping, maintenance, and hygiene, which further accentuates a low perception of, as well as a low quality of, the facility.
- **Urban Concentration and Specialized Roles Cities are:** In Urban Facilities (District Hospitals and Tertiary Care Centres), though the absolute number of staff members per post is higher, still, there are issues in this sector as well, in that the support infrastructure for staff members, including hostels and training institutions, is relatively good but not as well-developed as in Rural Facilities.
- **Concentration of Specialization**: Specialty-trained personnel, like specialist nursing units, bio-medical engineers, and specialized lab technicians, are attracted to city hospitals due to better training facilities and higher salary scales, which ensures that specialized equipment has a better chance of being operational and used.
- **Workforce Density**: This density remains relatively higher, which results in ease of duty rotation, as opposed to in rural ones that are singly staffed. The Problem of Outsourcing: In order to absorb this workload, many metropolitan hospitals make use of outsourced support staff. Such support staff can be in the form of cleaners, security personnel, data

entry operators, among other support personnel. This has been known to pose a problem with regards to commitment, training, and continuity when it comes to government employees. The adequacy of the government healthcare delivery system relies on satisfying the IPHS requirements of paramedical and support staff, especially in rural areas, so that the existing potential of doctors, as well as available infrastructure, can be maximized.

2.9 Community Health Workers (CHWs)

The role of Community Health Workers (CHWs), especially in terms of ASHA (Accredited Social Health Activist) and ANM (Auxiliary Nurse Midwife), plays a vital role in the government's focus on primary healthcare as a vital "bridge between communities and healthcare delivery in a country's healthcare system," but their effectiveness is impacted by their setting. In this regard, in a "rural setting, ASHA, with a population of 1,000, remains a focal point for community members as their major healthcare advocate, with a major emphasis on generating demand for various services such as immunization and institutional deliveries, with emphasis on significant fundamental healthcare knowledge and primary curative care needs as offered by her drug kit, while ANM provides support from Sub-Centre."

However, this structure in a rural area faces issues in terms of a huge "pressure of work, performance-based incentives that are often delayed, with a lack of a fixed salary structure for ASHAs, as well as lack of proper infrastructural support."

On the other hand, in "urban areas, with their implementation of National Urban Health Mission (NUHM), CHWs are working in a relatively denser, even more diversified, environment of a slum where their population as a whole reaches 2,000-2,500, with their key focus being on specialized matters of urban population, like remaining loyal to TB-CDT, with screening of Non-Communicable Diseases, as opposed to their role in a different setting, but this faces issues in terms of a lack of community integration as a whole, with resultant direct referral themselves to tertiary care of major urban hospitals," hence "making their role as a major referral point redundant." Nonetheless, as a whole in both cases, "success of CHWs hinges on their continuous knowledge development, in generating potential payments as a major aspect, in addition to developing support structures for their continuity as a vital bridge between healthcare delivery and a major community setting."

2.10 Service Delivery and Quality of Care

Scope of Primary Care

The scope of Primary Care provided by government facilities is quite different between rural and urban areas, based on their staffing, infrastructure, and differential priority health burden. However, it is universal care in its foundational goal. In rural areas, the PHC is responsible for providing a comprehensive package of services with a heavy emphasis on RMNCH+A services (Reproductive, Maternal, New-born, Child and Adolescent Health) comprising antenatal/postnatal check-ups, routine immunization, and family welfare services.

Additionally, PHCs have been the prime facility that carries out National Health Programmes for communicable diseases such as Malaria, TB, and Leprosy. Still, the chronic scarcity of doctors and equipment limits the curative scope to simple ailments mostly, thus referring cases even for minor surgery or advanced diagnostics. In contrast, the Urban Primary Health Centres (UPHCs) and Health and Wellness Centres located in cities address a different epidemiological challenge; the need to shift towards the management of Non-Communicable Diseases (NCDs) like hypertension, diabetes, and cancers, along with the special requirements of thickly populated slums over sanitation-borne diseases and mental health.

While the UPHCs are often better placed in accessing urban diagnostic laboratories, they also suffer from pressure to integrate these broader services without adequate dedicated staff, which implies that the scope of primary care is theoretically comprehensive but functionally constrained due to location-specific resource limitation and health priorities.

Communicable Disease Control

The government facility approach towards Communicable Disease Control practices a noticeable emphasis and different working conditions, present in rural and urban areas. Since in rural areas, “the control of communicable diseases, headed by Primary Health Centre, primarily focuses on Vector Borne diseases like Malaria, Dengue, Water Borne diseases, along with the running of key National programs for diseases like Tuberculosis (TB) and Leprosy.”

The PHCs make use of their “vast network of Community Health Worker personnel for Active Case Finding, Surveillance, anti-Mosquito activities, and Ensuring Compliance with Drugs” like; for example, in “Tuberculosis, with DOTS.” There are, however, “Limited resources for mass testing, inadequate Sanitation facilities.” Meanwhile, in “Urban Areas, especially in Slums, where population densities are high, diseases which flourish in those areas are given priority like Communicable diseases like TB, Respiratory infections, and Emerging infections.” The Urban Primary Health Centres make use of “Contact tracing, rapid

tests in High Risk Areas, and Immunizations." While it seems easier for Urban Centres to "use specialized laboratories of District Hospitals for Communicable diseases," it also "requires different approaches in coping with migrating population, as well as a high reproduction rate due to population densities, and inadequate Sanitation conditions."

Maternal and Child Health Indicators

These differences in Maternal and Child Health Indicators are among the most glaring disparities in government healthcare in India, where these have been showing a marked disparity in worse outcomes in rural India compared to their urban counterparts. "Important indicators like Infant Mortality Rate (IMR) – infant deaths per 1,000 live births, and Maternal Mortality Ratio – maternal deaths per 100,000 live births are higher in rural India.

These are related to access and quality of care. Thus, data indicates that IMR in rural India remains doubly higher than in other areas." This remains due to "Continuum of Care gaps, where mothers in rural areas are significantly less likely to avail themselves of even the obligatory four Antenatal Check-ups (ANC) and are also likely to be less compliant with a complete course of immunizations for their infants. Most importantly, delayed access to care from Skilled Birth Attendants (SBA) and emergency obstetric care, including Caesarean sections, remains due to the non-functional status of First Referral Units (FRU) in rural Community Health Centres (CHCs).

Although India's "Janani Suraksha Yojana scheme, implemented along with National Health Mission, has been successful in increasing institutional delivery rates in rural India, a substantial proportion of deliveries takes place in understaffed, and in most cases, under-resourced Public Health Centres (PHCs)/Community Health Centres (CHCs), which are far from being well-functioning hospitals, where emphasis has been given to the quantum of delivery institutions rather than their emergency care capabilities, despite which a high mortality rate remains, maintaining a divide between deliveries in Rural India and Urban India."

2.11 Non-Communicable Disease (NCD) Burden

The challenge of Non-Communicable Disease Burden has led to a paradigm shift in government healthcare, which has highlighted not only a growing challenge in rural areas but also, importantly, a distinct magnitude of this challenge in urban areas. Urban dwellers have long been most affected by Non-Communicable Diseases like hypertension, Diabetes, Cardiovascular Diseases, and Cancers; this has been mostly due to lifestyle reasons like a sedentary lifestyle, increased stress, unhealthy food, and pollutants like air pollution. Urban

Primary Health Centres and large city hospitals are working very closely on large-scale screening, early identification, and complicated management of such chronic illnesses.

However, it has been seen that the epidemic of Non-Communicable Diseases has started spreading aggressively in rural areas, courtesy of a change in food habits, reduced physical activity, and smoking/alcohol intake. Rural healthcare facilities like PHCs and CHCs are now finding it extremely challenging to "cope with this dual burden of diseases."

The most prominent challenge faced in this area of "comprehensive management of Non-Communicable Diseases" is that of lack of "infrastructure and healthcare manpower"; they are not equipped with "equipment for constant patient monitoring, specialized medicines for Non-Communicable Diseases, and specialized training of physicians for successful management of chronic non-communicable illnesses." This has led to a "delay in identification of non-communicable illnesses in those living in rural areas, with subsequently low patient compliance."

2.12 Emergency Services

Availability and efficiency of Emergency Services thus bring out a very critical fault line in the governmental health system since timely response is often the dividing line between life and death, and access is drastically unequal between urban and rural settings. In urban areas, emergency care is concentrated mainly in the casualty and trauma departments of large District and Tertiary Care Hospitals. These facilities are also better endowed with specialized staff, equipment, and ALS ambulances. However, the urban system often faces the disadvantage of overcrowding, long waiting times, and considerable delays in patient transfer on account of acute traffic congestion.

The core deficiency in the rural setting is that of the pre-hospital care and transport system. Herein, the most important service is the Emergency Medical Transport-which is performed, for example, by the national toll-free ambulance services (108/102).

While these are indeed services meant to reach the most inaccessible locations, their functionality is seriously compromised because of the long response times as a consequence of poor connectivity, dispersedly scattered base points of ambulances, and an overall short supply, especially of functional ambulances equipped with ALS. Further, once a patient is brought into a rural facility such as a PHC, the facility often lacks the basic equipment or staff that may stabilize the patient, resulting in the immediate, often delayed, secondary referral to a distant District Hospital. This greatly heightens the chances of mortality, particularly for time-sensitive conditions such as road traffic accidents, cardiac events, or obstetric emergencies.

2.13 Drug and Supply Chain Management

Efficiency of the Drug and Supply Chain Management system plays a vital role in government healthcare functionality, with drug availability playing a key role in differentiating between city and rural healthcare facilities.

- **Rural Challenges**: Stock-Outs and Logistics
- **Chronic Stock-Outs**: There are stock-outs of essential drugs in Rural Primary Health Centres (PHCs) and Community Health Centres (CHCs), which forces patients to purchase drugs from private chemists, resulting in Out-of-Pocket Expenditure (OOPE).
- **Poor Forecasts**: Management suffers from lack of proper forecasts, as this has been seen in most cases where the rural staff lack the means of determining drug requirements using local patterns of diseases.
- **Logistical Failures**: "Last mile" issues exist, as issues of transportation, lack of road connectivity, as well as absence of a cold chain distribution network for vaccines, work as a drawback in terms of quality.
- **Inventory Management**: There are no qualified personnel in peripheral levels to undertake management of inventories, including issues related to drug wastage due to expired drugs.

2.14 Urban Operations and Specialized Supply

- **Centralized Procurement**: Urbane District Hospitals and Tertiary Care Centres benefit from relatively efficient and even centralized approaches to procurement, either through government-controlled medical services corporations, which help in making large purchases.
- **Specialized Drugs**: Urban areas see a larger volume of tertiary cases and hence a larger volume of specialized drugs that are not stored in rural healthcare facilities.
- **Quality Assurance**: Cities usually offer a better infrastructure for quality assurance, such as drug-testing laboratories, as well as a stricter audit process in order to maintain efficient control over counterfeit and low-quality drugs. Volume Pressure: Although a better supply chain, a huge patient turnout in major city-based hospitals can cause a shortage of a commonly used drug. A sustained and high-quality supply of free medications in the rural setting has been among the greatest challenges to overcoming issues of health equity.

2.15 Government Health Facilities in Rural Areas

Rural areas face unique challenges, including poor connectivity, a shortage of medical staff, and insufficient infrastructure. To tackle this, the government has created a tiered system:

Sub-Centres (SCs)

Sub-Centres are the basic and initial point of contact for rural communities with the public health system. They are usually located in small villages and form the backbone of India's rural healthcare delivery system.

1. **Population Coverage:** Each Sub-Centre generally serves a population of 5,000 people. In remote or tribal areas, it supports around 3,000 people.
2. **Staffing:** Each Sub-Centre employs at least one Auxiliary Nurse Midwife (ANM) and one Multipurpose Health Worker (MPHW). Additional staff may be present based on the workload and the population size.

Key Services Provided:

- Immunization programs for children and pregnant women, including vaccines for polio, tuberculosis, measles, and hepatitis.
- Maternal and Child Healthcare, consisting of antenatal checkups, postnatal care, and support for safe deliveries.
- Family Planning Services, which include the distribution of contraceptives and counselling on reproductive health.
- Health Education, focusing on awareness programs about nutrition, personal hygiene, sanitation, breastfeeding, and preventing common diseases.
- Basic First Aid, providing treatment for minor illnesses and referring patients to higher facilities when needed.

Sub-Centres focus on preventing and promoting health rather than on curing illness. They aim to educate people and lower disease rates through early interventions.

2.16 Primary Health Centres (PHCs)

Primary Health Centres (PHCs) are the first-level referral units. They connect Sub-Centres and higher-level healthcare facilities.

a) Population Coverage: One PHC typically serves about 30,000 people, or 20,000 in hilly, tribal, or hard-to-reach areas.

b) Staffing: A PHC usually has:

- One Medical Officer (MBBS)

- Nurses
- Pharmacist
- Lab Technician
- Support staff, such as health assistants and clerical workers

Services Offered:

- Outpatient (OPD) Treatment: For common illnesses like fever, infections, and skin diseases.
- Basic Emergency Care: This includes minor surgeries and normal deliveries.
- Maternal and Child Health Services: These cover antenatal care, institutional deliveries, and immunizations.
- Free Medicines: Distribution of essential medicines for common diseases.
- Disease Control Programs: Focused on malaria, TB, leprosy, and other public health issues.
- Health Promotion Activities: Awareness on nutrition, sanitation, and family planning.

PHCs form the backbone of rural healthcare by providing both preventive and basic curative services. They also oversee the functioning of Sub-Centres within their area.

Community Health Centres (CHCs)

Community Health Centres (CHCs) are higher referral units for PHCs. These are larger hospitals that offer specialist services and inpatient care.

a) Population Coverage: A CHC generally covers about 1.2 lakh (120,000) people and supports several PHCs.

b) Infrastructure: Each CHC is expected to have at least 30 inpatient beds, a functioning operation theatre, laboratory, and x-ray services.

c) Staffing:

- 4 Specialist Doctors, including a Surgeon, Physician, Gynaecologist, and Paediatrician.
- Nurses, Lab Technicians, Pharmacists, and Support Staff.

Services Provided:

- Specialist Outpatient and Inpatient Services
- Emergency Care: This includes handling accidents, trauma, and caesarean sections.
- Referral Services: For serious patients who need care beyond the PHC level.
- Inpatient Admission: For those requiring hospitalization and recovery.

- Diagnostic Services: These include laboratory tests, imaging, and other investigations.

CHCs are essential for providing secondary healthcare and easing the load on district hospitals.

Mobile Medical Units (MMUs)

Mobile Medical Units are a special innovation created to reach remote and underserved areas without fixed health facilities.

a) Structure: MMUs are usually vans or mini-buses equipped with:

- A Doctor
- A Nurse or Paramedic
- Basic medicines
- Diagnostic tools like blood pressure monitors, glucometers, and rapid test kits

b) Functioning:

- Visit villages on a fixed schedule, either weekly or monthly.
- Provide basic treatment, health checkups, distribute medicines, and perform minor procedures.
- Refer serious cases to nearby PHCs or CHCs.

MMUs are particularly useful in tribal regions, remote villages, and disaster-affected areas. They deliver healthcare directly to people's doorsteps, ensuring accessibility.

To support and improve rural health systems, the Government of India has introduced several key schemes, including:

Table 1. Major Government Schemes for Rural Healthcare.

GOVERNMENT SCHEMES	Mission of the scheme	Population benefitted	RATIO	Reference
National Rural Health Mission (NRHM)	Aims to strengthen the rural healthcare system. Focuses on maternal and child health, by trained workers' skills, such as training ASHAs and ANMs.	During the year: 2005-2025, 500–700 million Acc. To report of 2023, 63-64% of total population.	Minor: Adults 2: 3	(nhm.gov.in)
Janani Suraksha Yojana (JSY)	Promotes safe deliveries in hospitals by	During the year: 2010 – 2024		(nhm.uk.gov.in)

	offering cash incentives to pregnant women, particularly those from Below Poverty Line (BPL) families.	10 – 11 million women per year get benefitted.		
Janani Shishu Suraksha Karyakram (JSSK)	Ensures no pregnant women or sick neonate (babies up to 30 days old) pays out-of-pocket expenses while in public health facilities.	During the year 2014 – 2015, the scheme has benefitted over 16.60 crore (i.e. ~166 million) beneficiaries.	Mother: Infants 2: 1	(nhm.gov.in)
Rashtriya Bal Swasthya Karyakram (RBSK)	Screens children aged 0 to 18 for four categories of health conditions: birth defects, diseases, deficiencies, and developmental delays.	During the year: 2020 – 2023, 27crores children got benefitted. (0-18 years).		(rbsk.mohfw.gov.in)
Ayushman Bharat – Health and Wellness Centres (HWCs)	Converts existing Sub-Centres and Primary Health Centres into Health and Wellness Centres which provides free hospitalization up to ₹5 lakh per family per year.	During the year: 2020 – 2023, 134 crores people get benefitted. 50-70% of total population.	1: 2	(ab-hwc.nhp.gov.in)
Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (PM-JAY)	Offers free secondary and tertiary healthcare services in approved hospitals. Coverage is ₹5 lakh per family per year for hospitalization.	20 – 26 million beneficiaries get benefitted per year.	Minor: Adults 3: 8	nha.gov.in › PM-JAY

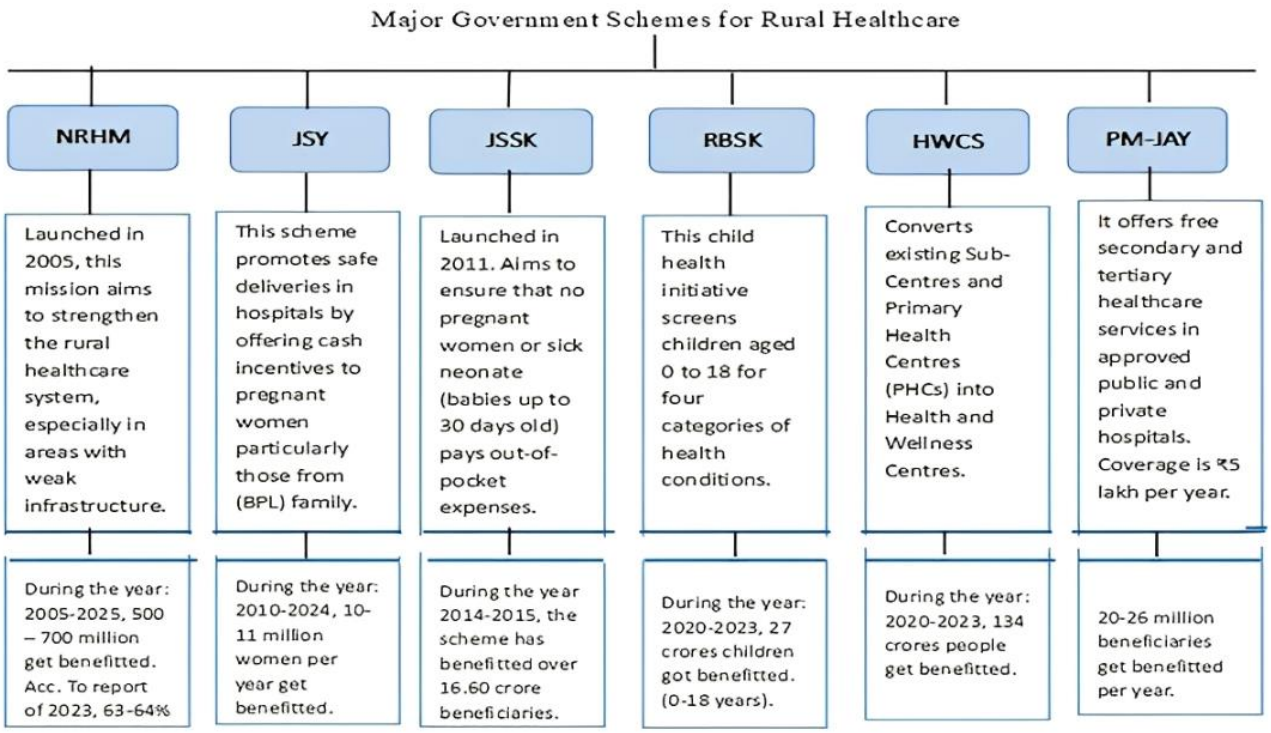


Fig. 2: Flowchart of government schemes in Rural areas.

Source: Created by author

Government Health Facilities in Urban Areas

Urban areas have better infrastructure, but they also deal with issues like overcrowding, pollution-related illnesses, and increasing lifestyle diseases. To tackle this, the government offers:

- **Urban Health Posts (UHPs)**

Urban Health Posts (UHPs) are small health units set up in urban slums and low-income areas to provide basic healthcare services to underprivileged populations.

Location & Purpose: UHPs are located in or near slum areas. They aim to connect the urban poor with formal health services. These areas often struggle with clean water, sanitation, and hygiene, which makes them prone to diseases.

Services Offered:

- **Maternal and Child Healthcare:** Antenatal and postnatal check-ups, nutritional advice, and health monitoring.
- **Immunization:** Vaccinations for newborns and children against common diseases like measles, TB, diphtheria, and polio.

- **Family Planning:** Distribution of contraceptives, counselling, and referrals for sterilization.
- **Basic Health Education:** Information on hygiene, nutrition, sanitation, and disease prevention.

Significance: UHPs play a crucial role in addressing the health needs of urban slums, particularly for women and children. Their location and simplicity make healthcare more accessible for marginalized groups.

- **Urban Primary Health Centres (UPHCs)**

Urban Primary Health Centres (UPHCs) are the first point of contact for people in urban areas, focusing especially on the urban poor.

Role & Coverage:

- One UPHC typically serves a population of 50,000 in cities.
- They meet the outpatient needs of individuals, which helps reduce the patient load on larger hospitals.

Services Provided:

- **General OPD Treatment:** Diagnosis and treatment for common illnesses and infections.
- **Essential Lab Tests:** Blood tests, urine tests, and other basic diagnostics.
- **Free Medicines:** Distribution of necessary drugs for chronic and acute illnesses.
- **Immunization & Vaccinations:** For both adults and children.
- **Health Promotion Activities:** Awareness programs about communicable and non-communicable diseases.

Significance: UPHCs help ease crowding in larger hospitals by managing primary cases and referring more serious situations to higher facilities. They also play a crucial role in implementing national health programs like TB control, diabetes screening, and hypertension management.

- **Urban Community Health Centres (UCHCs)**

Urban Community Health Centres (UCHCs) are larger health facilities that provide secondary-level care and serve as referral centres for UPHCs.

Infrastructure:

- Typically have 50 to 100 beds and offer better-equipped facilities than UPHCs.
- Include departments for emergency care, surgery, maternity, paediatrics, and more.

Services Offered:

- **Emergency Care:** For trauma, accidents, burns, and acute medical conditions.
- **Specialist Services:** Including internal medicine, gynaecology, paediatrics, general surgery, and obstetrics.
- **Inpatient Services:** Admission for patients who need hospitalization or surgeries.
- **Laboratory and Imaging Services:** X-ray, ultrasound, ECG, and other diagnostics.

Significance: UCHCs function as mini-hospitals within cities, addressing cases that cannot be managed at UPHCs. Their presence ensures a smoother referral system and better healthcare coverage for urban populations.

- **Government Hospitals and Medical Colleges**

At the top of urban healthcare are large government hospitals, including district hospitals, state-run medical colleges, and national institutions like AIIMS (All India Institute of Medical Sciences).

Scope and Reach:

These institutions offer tertiary-level care, which includes complex treatments and surgeries. They serve local urban populations and also receive referrals from rural and semi-urban areas.

Services Provided:

- **Super-specialty Care:** Cardiology, oncology, nephrology, neurology, and critical care (ICUs).
- **Advanced Surgeries:** Organ transplants, cancer treatments, orthopaedic surgeries, and more.
- **Diagnostic Excellence:** Access to CT scans, MRIs, pathology labs, and additional services.
- **Training & Education:** These centres also act as teaching hospitals, educating medical, nursing, and paramedical students.

Significance: These hospitals form the backbone of the Indian healthcare system. They handle the most complex medical cases and train the next generation of healthcare professionals.

The Government of India has introduced several schemes aimed at improving urban healthcare, especially for economically weaker sections.

Table 2. Major Government Schemes for Urban Healthcare.

GOVERNMENT SCHEMES	Mission of the scheme	Population benefitted	Ratio	Reference
National Urban Health Mission (NUHM)	Aims to strengthen the health system in urban slums and marginalized areas.	20–30 million urban poor directly get benefitted from the scheme per year.	Minor: Adult 1: 1.7	nhm.gov.in
Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (PM-JAY)	Free secondary and tertiary healthcare services in approved hospitals. Coverage is ₹5 lakh per family per year for hospitalization	17.5–20 crore urban beneficiaries get benefitted per year.	Minor: Adult 1: 2.2	Nha.gov.in >PM-JAY
Ayushman Bharat – Health and Wellness Centres (HWCs)	Offer a variety of comprehensive health care services such as maternal and child health, communicable and non-communicable diseases.	62.8% of urban beneficiaries were satisfied with the overall treatment received at Health and Wellness Centres.	Minors: Adults 1: 2.2	ab-hwc.nhp.gov.in
Pradhan Mantri Atmanirbhar Swasth Bharat Yojana (PM-ASBY / PM-ABHIM)	Aims to enhance health systems, guarantee continuity of care, from primary to tertiary health care, and strengthen the health infrastructure.	The setting up of 11,024 U-HWCs clearly reflects a huge scale-up of primary healthcare services in urban India.		Pib.gov.in, 2021
National AIDS Control Programme (NACP)	Control and prevent HIV/AIDS. Carried out by the National AIDS Control Organization (NACO).	16.28 lakh (1.63 million) high-risk individuals were covered during 2023 by targeted interventions (TIs) and Link Worker Schemes in India.	Men: Women 1: 3	naco.gov.in >nacp
Urban Sanitation & Health Linked Initiatives	Many programs and policies administered by the government in India address urban sanitation. The Swachh Bharat Mission (Urban) is the most prominent of these programs.	Access to Sanitation: With 12 million toilets built, considering an average household size of 5, roughly 60 million urban citizens have access to improved sanitation facilities.		pib.gov.in, 2025

Other Services provided:

Free Medicines and Diagnostics Schemes (State-Specific)

Several states like Rajasthan, Tamil Nadu, Madhya Pradesh, and Telangana have free drug and diagnostic schemes for public healthcare facilities. The aim is to lower out-of-pocket

costs for basic health needs. Patients can receive prescribed medicines and basic tests free of charge at government hospitals and health centres.

Mohalla Clinics (Delhi Model)

This successful initiative by the Delhi Government aims to provide free and quality primary healthcare closer to people's homes.

These small neighbourhood clinics offer:

- Free doctor consultations
- Free diagnostic tests
- Free medicines
- The design helps to decongest hospitals and makes preventive care more accessible.

Urban healthcare in India is changing due to improved infrastructure, better outreach, and significant policy initiatives. However, challenges still exist, especially in slum areas. Overcrowding, pollution, and poverty lead to high disease rates.

The mix of Urban Health Posts, UPHCs, UCHCs, and Tertiary Hospitals, along with important programs like NUHM and Ayushman Bharat, is helping to build a more inclusive, responsive, and accessible urban healthcare system.

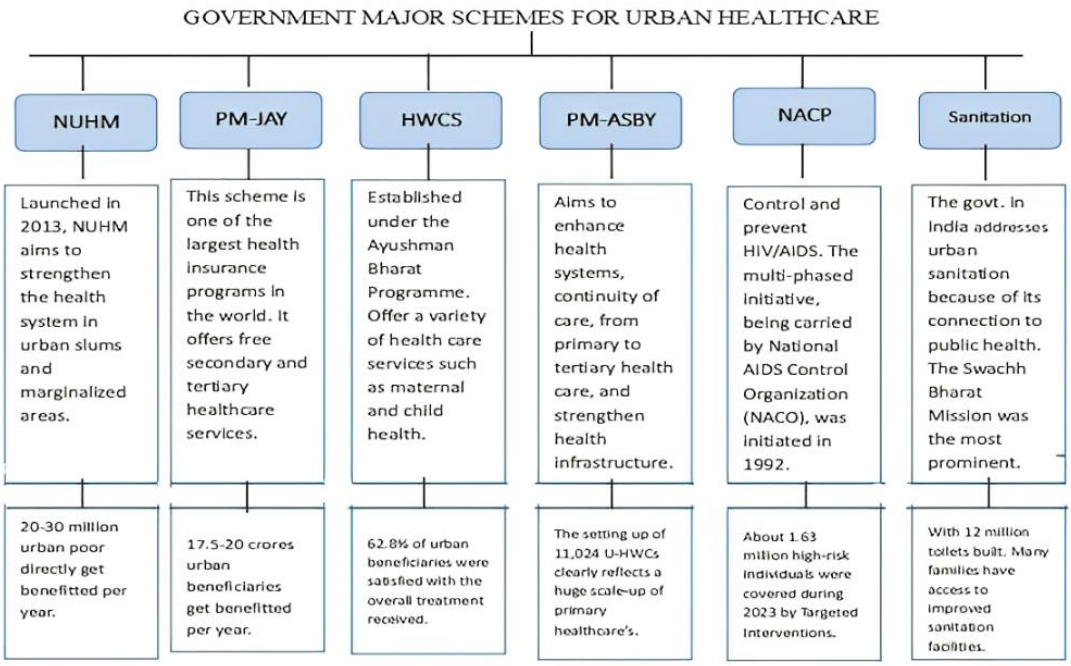


Fig. 3: Flowchart of government schemes in urban areas.

2.17 Comparative Analysis of Rural vs Urban Health Facilities

When looking at healthcare facilities in rural and urban areas, there are clear differences in how easy it is to get care, the quality of the facilities, the number of staff, and the overall standard of medical treatment. In rural areas, getting to healthcare services is a big challenge because many villages are far from each other, there are not enough roads or transportation options, and there aren't enough healthcare centres operating. People in these areas often have to travel far to reach even the most basic healthcare units like Sub-Centres or Primary Health Centres. There is very little support for getting patients to medical facilities quickly, making it difficult to get timely care. On the other hand, urban areas usually have many hospitals and clinics close to each other, and it's easier to reach them using public or private transport. City dwellers typically have several healthcare choices within a short distance, from small clinics to big hospitals that offer a wide range of medical services.

Table 3. Comparative Analysis between Rural and Urban health.

SCHEMES	RURAL	URBAN	MAJOR DIFFERENCES
NRHM/NUHM	In 20 years, 500 – 700 million people benefitted. i.e. 25-35 million people per year.	20 – 30 million people get benefitted.	Prominently helped the rural population, especially via its sub-mission.
PM-JAY	20-26 million people get benefitted per year.	17.5-20 crore people benefitted per year.	Made a more noticeable impact in rural areas regarding increasing public health, insurance coverage.
HWCs	50-70% of the rural population get benefitted.	62% of urban people get benefitted with the overall treatment.	Rural population has experienced a greater impact as the program has specifically aimed at eliminating the healthcare divide which already existed.

2.18 Governance, Funding, and Policy

Public Spending Disparity

The public spending disparity focuses on persistent and significant imbalance in the government's resource allocation, heavily favouring urban healthcare infrastructure at the cost of rural primary and secondary care. Government spending on health is perforce asymmetrical; the disproportionately large share of the budget is committed towards sustaining, upgrading, and expanding high-cost Tertiary Care Hospitals (such as specialized medical colleges and super-specialty institutions) in major metropolitan and urban centres.

This lopsided spending provides advanced technology, specialized personnel, and complicated procedures to urban residents, besides those rural residents who can afford to travel, but it starves the peripheral system. Often, rural primary and secondary care facilities (PHCs and CHCs) receive woefully inadequate and delayed funding for their most basic needs, including maintenance, drug procurement, and staff requirements.

Although well-intentioned centralized schemes, like the National Health Mission (NHM), try to make amends through programmed funding for certain needs, the large bulk of non-scheme, recurring expenditure-usually salaries and capital investment-remains oriented towards the urban hierarchy. This leads to a much lower per capita public health expenditure on the rural population, which directly translates into the quality deficits of poor infrastructure, staff vacancies, and equipment failures that have come to characterize the rural-urban divide.

2.19 Impact of National Health Missions (NHM)

The National Health Missions (NHM), which also encompasses the earlier National Rural Health Mission (NRHM) as well as the latter National Urban Health Mission (NUHM), has been a revolutionary initiative in bridging the healthcare divide between urban and rural sectors in India with a targeted and flexible funding mechanism.

Thus, in rural India, the National Health Mission has been a catalyst in revitalizing peripheral healthcare facilities, most importantly in increasing functional Sub-Centric and Public Health Centres, and most importantly, in providing critically needed funds for mobilizing Community Health Worker personnel (ASHA and ANMs) in healthcare delivery, which has shown considerable improvement in key outcome areas like Institutional deliveries and Immunizations.

The scheme also offers flexible funds known as "Untied Funds," which help targeted healthcare facilities in rural India address pressing needs like minor repairs and purchasing. On a similar note, in urban India, the mission component, i.e., NUHM, aims to upgrade Urban Primary Health Centres as well as address "specific needs of slums, including issues of sanitation and screening for Non-Communicable Diseases."

The drawback, however, with this government initiative has been that despite showing substantial and needed increases in allocations for primary care as well as for all outreach and demand generation strategies, it has not been able to address fundamental issues in specialist Appointment issues in rural secondary care facilities, including a deficiency of specialist staffing in Rural Secondary healthcare infrastructure facilities like CHCs, as well as a lack of needed recurring funds for Infrastructure maintain.

Health Insurance Schemes

The Health Insurance Schemes offered or facilitated by the government are a revolution in themselves in their attempt to minimize Out-of-Pocket Expenditure (OOPE), but their reach remains different for both rural and urban communities. The key scheme remains the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PM-JAY), which provides a family of 5 lakhs every year for "secondary and tertiary care hospitalization" for "the poorest 40% population in India as Identified through Socio-Economic PROOF" in both Urban and Rural Areas.

In Rural Areas:

Impact: This remains a defining factor as it provides a protective mechanism for life-threatening diseases that would otherwise lead to conditions of "poverty" for most of these people, who mostly bear costs of "high-end District and Tertiary" Hospitals that are mainly "Geographically" remotely located.

Challenge: Its success remains threatened due to "Functional" capabilities of Rural Health Infrastructure like "Primary" Healthcare Centres and their "Community" Health Centres to provide effective "referrals" for further investigation, which remains a challenge.

In Urban Areas:

Impact: Urban "poor" like "rag pickers" and "construction" workers are also protected from heavy" costs of access that are involved in "urban" government or "private" Hospitals. There exist many government-run "State-wise" health projects along with this.

Challenge: High usage in "Urban" has led to major expenses being converted "to fund" government Hospitals, along with "empanel" private ones. In this, a major portion of "lower" middle-class, and middle "class" also remains left out for not being categorized among "10% poorest" for this scheme, in which either "privates" are taken, or "CCU" Out-of-Pocket" costs are met. Both Rural and Urban population derive benefits from "cash-less-ness" that has been revolutionized in both due to standardized packages that are offered with all these features, though "efficiency" in executing this scheme remains threatened due to "FFS" that remains a common point for all related to it.

Digital Health and Telemedicine

Digital Health and Telemedicine is now being seen as a novel, alternative approach for government healthcare, mainly with a focus on filling a pressing imbalance between specialist care in urban and rural India. The major project in this domain for India is e-Sanjeevani,

which offers two different models: a doctor-to-doctor telemedicine solution for online consultations between PHCs/CHCs and city-based specialists, as well as a patient-to-doctor portal for outreach services.

Telemedicine in Rural India remains critical, as it has been instrumental in enabling doctors in distant PHCs and CHCs to seek immediate, in-session suggestions from city-based specialists such as cardiologists, paediatricians, and dermatologists, without requiring their patients to embark upon journeys of hundreds of kilometres. Not only does this help in saving patient effort as well as costs, but it also indirectly benefits the doctor in rural healthcare by providing a much-needed antidote for lonely professional isolation in their distant stations. On a lot of occasions, though, this specialized healthcare support remains intermittently available due to inadequate, erratic internet connectivity and lack of electronic literacy even among contemporary consumers as well as peripheral healthcare staff.

On other frontiers in Urban India, where IT infrastructure already remains abundant, enhanced use of Digital Health has been actively pursued for efficiency and automation, especially for installing HMIS for easy, uninterrupted record management, as well as enhanced use of various smartphone-based healthcare application software for patient-related tasks in terms of appointments, long-term management of chronic illnesses, and related follow-up, along with other similar additional advantages.

Nonetheless, in this domain as well, there stays a constant emphasis upon how this Digital Infrastructure support needs to be effectively utilized for knowledge extension and continuous management of patient care in a proactive manner for covering in-effectively served, neglected («underserved») masses from distant, far-flung, and impoverished Rural India.

2.20 Public-Private Partnership (PPP) Models

Public-Private Partnership Models: Public-Private Partnership Models in healthcare represent the philosophy of the government to achieve efficiencies, technologies, and capital from the private sector to fill critical service and infrastructural gaps.

Urban Implementation

Focus: Specialized services that are also very costly comprise the common focus of PPPs in urban areas, where private providers enjoy clear advantages. This may relate to contracting out advanced diagnostic services, such as CT or MRI scans in a public hospital; the provision of tertiary care services, such as specialized oncology or cardiology departments; or the management of entire facilities, including Greenfield specialty hospitals.

Advantage: These models reduce capital outlay for the government and improve service availability in crowded urban hospitals, often by using government land or buildings while private entities operate the service.

Rural Implementation

Focus: In rural areas, PPPs are critical for addressing the lack of human resources and secondary care infrastructure. Common models include contracting private providers to run key services at underutilized Community Health Centres (CHCs), especially for specialties like gynaecology, or managing emergency transport services.

Challenge: The financial viability of PPPs in rural settings is usually poor because the number of patients going there will be low, whereas the operation cost will be very high; hence, the government needs to provide a substantial viability gap funding and other strong financial incentives to attract private operators. Overall Impact Digital PPPs: Private-sector technology and platforms play a crucial role in all Digital Health and Telemedicine projects, such as e-Sanjeevani. Concerns: Common concerns in both contexts include affordability and equity, observance of quality standards by the private partner, and "cherry-picking" of profitable services with concomitant neglect of the needs of the poorest.

Review Methodology

To improve the practical understanding of healthcare systems, students are encouraged to participate in community-based activities that offer real-world insights into the challenges faced by rural and urban populations. These activities not only strengthen the project but also build a meaningful connection between students and the community.

Surveys and Interviews

Students can conduct simple surveys or interviews with:

- Rural families or migrant workers to learn about the health facilities they use, the distance to the nearest hospital, and any challenges they face.
- Urban families to understand their choices between government and private hospitals, as well as their experiences with healthcare quality, waiting times, and costs.

Visit to PHC or UPHC

Organize a group visit to a Primary Health Centre (PHC) in a rural area or an Urban Primary Health Centre (UPHC) in a city. Students should observe and document:

- Services offered (e.g., OPD, maternal care, immunization)
- Staff availability (doctors, nurses, ANMs)

- Cleanliness and hygiene standards
- Availability of medicines and equipment

Awareness Campaign

Create and distribute posters or pamphlets in local communities to raise awareness about:

- Ayushman Bharat
- Free vaccination programs
- Importance of institutional deliveries

Community Report: Compile findings into a short report that highlights the key differences, issues, and suggestions based on firsthand observations and community feedback.

Data Description

Primary Data: Primary data refers to the original data collected directly from the respondents through the survey process. In this survey, primary data is gathered through structured questionnaires, face-to-face interviews, or online surveys, targeting individuals from different age groups. The focus is on gathering firsthand information about medicine related problems faced by these groups.

Primary Data Components: Gender: Male, Female, Other.

Age: Categorized into different age groups.

Medication Use: The frequency and type of medication currently used by the respondent.

Adverse Drug Reactions (ADRs): Information on any adverse effects experienced due to medications (e.g., allergic reactions, nausea, dizziness).

Access to Medicines: Availability of prescribed medications in local pharmacies or healthcare facilities.

Secondary Data: Secondary data refers to data that has already been collected, analyzed, and published by other sources, such as healthcare reports, research studies, or official statistics. In this context, secondary data provides a background for understanding the broader patterns and trends related to medicine-related problems across various age groups.

Secondary Data Components:

-Existing studies that explore the impact of medicine-related problems in different age groups.

-Data from published medical journals regarding adverse drug reactions, medication errors, and age-specific medication challenges.

-Government and health organization reports that include statistics on drug safety, medication misuse, and age-related health issues.

-WHO or CDC reports on the global burden of medication-related problems across different age demographics.

-Data from pharmaceutical companies about the common side effects and adverse reactions associated with commonly prescribed drugs for various age groups.

3.FINDINGS

Based on the research, field visits, surveys, and interviews conducted for this project, several important findings have emerged about the current state of healthcare in rural and urban areas in India:

Rural Areas Have Wider Coverage but Weaker Infrastructure

Rural healthcare systems are spread out over large geographical areas, often with Sub-Centres and Primary Health Centres situated far apart. However, these facilities often struggle with staff shortages, outdated equipment, and limited resources. Many villages still depend on small clinics or travel to nearby towns for proper treatment. While government schemes aim to strengthen rural healthcare, the implementation often faces logistical and administrative hurdles.

Urban Areas Offer Better Facilities but Face Overcrowding

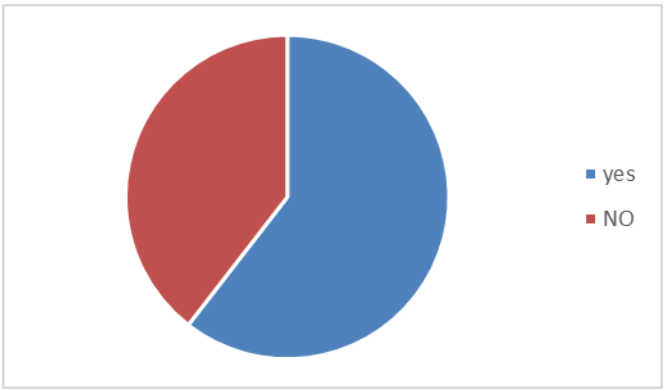
Urban healthcare infrastructure is more developed, with a higher concentration of hospitals, specialists, and diagnostic services. However, this results in severe overcrowding, particularly in public hospitals. Long waiting times, overworked staff, and a lack of personalized care were common issues reported during community interactions. While private hospitals are better equipped, their high costs make them out of reach for many people in urban poverty.

Low Awareness of Government Health Schemes

Many people in both rural and urban areas remain unaware of existing government health schemes like Ayushman Bharat, Janani Suraksha Yojana, or free vaccination programs. This lack of awareness stops eligible families from accessing free or subsidized healthcare services, showing the need for better community outreach and information efforts.

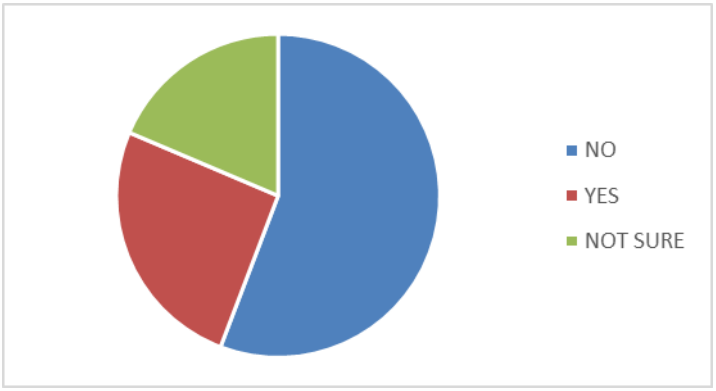
Number of Participants: 35

AGE GROUP	NO. OF PARTICIPANTS
Below 18	12
18 - 30	13
31 - 50	5
Above 50	5



% of participants who have ever stopped or reduced the dose because the medicines were too costly:-

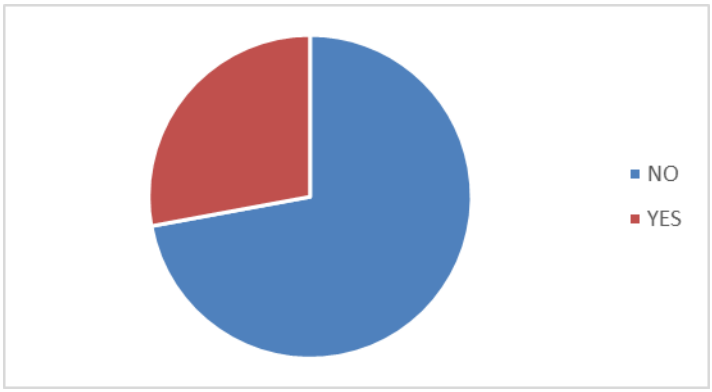
This pie chart depicts that among 100 responses, results showed that 60.5% (shown in blue) of the patients did not cite costs as a reason to non-adhere to their medications. On the other side, 39.5% (as shown in red) responded "Yes," which is a daunting concern to nearly 40% of respondents, indicating affordability problems with respect to the medicines themselves. Whereas a high percentage adheres to their dose regimen, the significant percentage that faces challenges due to costs requires targeted interventions, such as financial assistance programs or policy changes to address issues of medication affordability and ensure better health outcomes.



% of participants to which there is too little availability of chemist/drug stores in the locality: -

This pie chart depicts that 55.8% (blue section) said 'No,' meaning most of the respondents do not think there is a shortage of availability of chemist/drug stores in their area. 25.6% (red section) responded in the affirmative, meaning that one-quarter of respondents believe there is a drugstore shortage in their locality. 18.6% (grey section) answered "Not sure," indicating that some people are not sure whether the business is available.

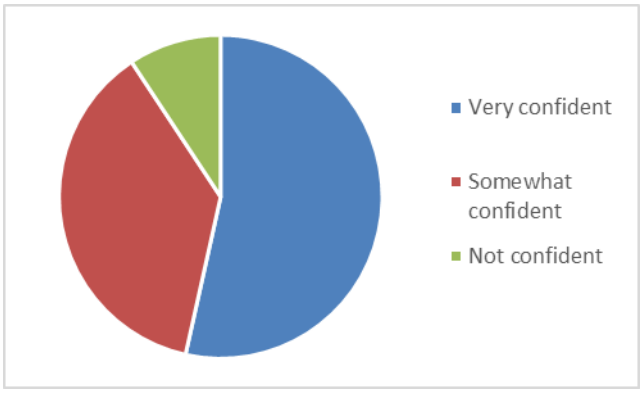
This would indicate that although many are happy with the supply of chemist/drug stores, a large proportion feel there is a lack or are unaware of their existence-a concern for localized shortages or ignorance about available facilities.



% of participants who had side effects from any medications during the past year: -

This pie chart depicts that 72.1% (blue section) responded in the negative, which means that most of the respondents did not get side effects from drugs in the previous year.27.9% (red area) answered "Yes", indicating that a smaller but not trivial proportion of respondents experienced side effects.

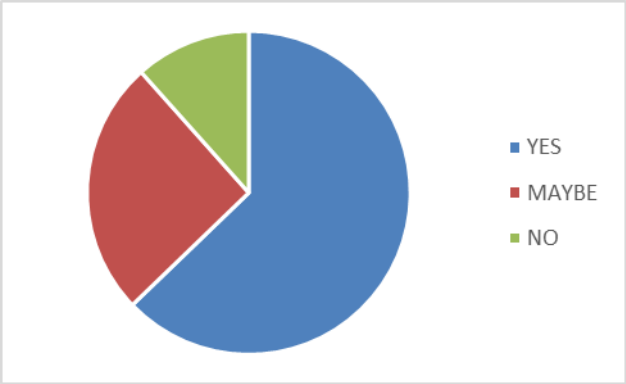
This means that whereas a good majority of respondents reported having no side effects, a third reported having side effects, which still necessitates further monitoring of drug safety and efficacy, as well as proactive health provider communication that would caution or prevent possible side effects.



% of participants who are confident that they can follow the instructions on their medications: -

This pie chart depicts that 53.5% (Blue section) are "Very confident" in their ability to follow medication instructions, showing that the majority is highly confident in understanding and

adhering to their regimen for medications that is 37.2% who are "Somewhat confident," that is, moderately confident but can still experience occasional difficulties or uncertainties.
Grey section: "Not confident." 9.3% There is this much smaller group that has problems following directions. Maybe, just maybe, a little more support or clarification.



% of participants who believe that the medications they are currently taking are safe for their age: -

This pie chart depicts that majority of the respondent's rate that the medications they are currently taking are safe for them: 62.8% (Blue section) said "Yes," which indicated that they were confident of the safety of their medications.
25.6% (Orange segment) answered "Maybe," indicating that the medicine they consume is not safe. In the Grey section, 11.6% answers, "No," which suggests that they do not believe their medications are safe.
This suggests that although many consumers believe in their drugs, the percentage of those who do not or are unsure and concerned is high enough to warrant attention and perhaps better education or consultation regarding the medications they are taking.

4. DISCUSSION

Medicine-related problems vary quite significantly across age groups because of physiological, metabolic, and lifestyle differences. For infants and children, dosing is more frequently problematic because of the low body weights-thereby requiring precise weight-based calculations-and immature liver and kidney function-affecting metabolism and excretion of drugs and thereby increasing the likelihood of toxicity.
Issues involving medicine intake might also result among adolescents in chronic diseases such as asthma or diabetes due to their fight for independence and influence from friends. In adults, multiple medicines that may be prescribed for more than one condition might lead to

drug interactions, side effects, or inefficacy. Older der adults face more risks because of changes that occur with age, such as renal and hepatic decline, reduced clearance of drugs, and increased sensitivity to certain drugs

In addition, impaired cognitive function can sometimes cause elderly people to make medication errors or commit non-adherence from unconscious reasons. Known age-specific challenges require adaptation of medical care to obtain the best results with minimal risk.

CHALLENGES AND SOLUTIONS

Overcrowding and Patient Wait Times

Overcrowding and Patient Wait Times represents a serious systemic flaw in government-provided healthcare services, which plays out differently but destructively in both Urban and Rural healthcare centres. The most adverse expression of this challenge arises in large Urban District and Tertiary Care Hospitals, which are often grossly overcrowded due to their huge patient catchments.

This patient pour has been derived not only from their huge population but also from a huge influx of self-referred patients from Rural Areas who bypass their own inadequate government-run PHCs and CHCs in search of specialist care and investigations. This has led to inordinately long waiting periods—frequently extending from several hours for appointments, several days for specialized investigations like Ultrasound and/or CT Scan, and weeks to months for elective surgeries—thereby leaving patients irritated, exhausted, and, in many cases, deteriorated. Counterintuitive in their models of patient flow, Rural Centres (PHCs and CHCs) are grossly underutilized, with surprisingly absent/no waiting lists due to a perception of lack of available services, including qualified personnel and equipment, which immediately prompts a Bypass for all that has been referred.

Notwithstanding, in those Centres where a Specialist has been attached, ideally through a visiting allocation of a specialist doctor, including a gynaecologist, that particular area of healthcare would experience a surge in overcrowding due to a sudden approbation of accumulated need. The root cause of this conundrum remains with their gross lack of equitable distribution of specialized medical care, as well as an inherently flawed referral policy that conduces all patients to congregate in groups around their sole access point for specialized care—purely government mega-hospital networks—situated exclusively in Urban India, which has adversely impacted their quality, dignity, and efficiency of delivery.

Out-of-Pocket Expenditure (OOPE)

The challenge of Out-of-Pocket Expenditure (OOPE)—uncompensated direct spending on healthcare by households—is a serious macroeconomic vulnerability for both urban and rural communities, though the motivations differ. In the rural population, it is mainly the result of "systemic failures" in the public sector, whereby households are forced into expenditures for transportation to and travel costs in distant "urban centres" for healthcare, expenditures on medicines due to regular stock-out of drugs in PHCs/CHCs, and eventually incurring costly care in "private sectors" due to "un-functional" equipment and a lack of specialized healthcare personnel in their vicinity. Such expenditure for "catastrophic" illnesses commonly pushes "poor" households in these areas into "debts" and "poverty."

In contrast, in "urban areas" though "physically" "closer" and "better" equipped, it is "costly" due to "many" "lower" "middle" and "middle" class citizens preferring access to care in expensive "private" "clinics" and "hospitals" due to "quality" and "convenience" considerations, as well as for additional "expenses" not otherwise "provided" in "Government" "hospitals" such as "diagnostics" "expenditures" for certain "implants." Thus, though aimed at mitigating "hospital" costs for "poorer" "citizens" in both groups, programs like "Ayushman Bharat" or "Pradhan Mantri Jan Arogya Yojana" (PM-JAY) are not accompanied in either "urban" or "rural" areas by a fulfilling cancellable reliance for main caring" "expenditures" in essential medicines.

Health Literacy and Awareness

Health Literacy and Awareness are key, non-infrastructure drivers of healthcare outcomes, which also display vast deficiencies that are distinct in nature for both rural and urban groups of population. In a rural setting, knowledge deficiencies are usually attributed to a lack of formal education, widespread superstitions, and traditional practices, hence displaying a lack of understanding of fundamental concepts of public healthcare practices, such as an understanding of the role of sanitation in preventive healthcare, benefits of scheduled immunizations, and early screening for those healthcare issues that are amenable to easy interventions. This lack of literacy immediately contributes to healthcare behaviour that promotes care-seeking only when severe, along with a lack of use of government healthcare programs.

Urban populations, with their relatively higher formal literacy, are impacted by sources of knowledge like misinformation, information overload, and conflicting knowledge, especially with regards to complicated lifestyle-related issues, such as Non-Communicable Diseases and

Mental Health problems. Although mass media campaigns are available in abundant supply, as in the case of all other metropolitan sectors, the challenge primarily remains for their coordinated, unanimous, and long-term healthcare-seeking behaviour, such as those practices that promote compliance with chronic care.

A counteractive role, as directed by government initiatives, which are delivered in a limited form as part of Community Health Worker networks and their programs under National Health Mission, aims to provide focused, community-specific knowledge in a deprived setting, as well as other internet-based programs in metropolitan areas, for making citizens aware of their healthcare practices and for effective use of government healthcare programs.

Informal Providers

Reliance on Informal Providers (unregistered, unqualified practitioners) is another crucial and considerably problem-ridden aspect of healthcare; its prevalence is directly proportional to the presence of functional gaps in the government system. In rural areas, informal providers like local quacks or lowly qualified persons will have a good constituency because they are geographically accessible, available round the clock, and can provide services immediately at low costs on credit or on easier payment terms, thus making up for the chronic absence of government doctors, lack of essential equipment, and medicine stock-outs at the official PHCs and CHCs.

This high dependence on unqualified sources, though convenient, involves considerable public health risk on account of frequent misdiagnosis, irrational use of drugs leading to antibiotic resistance, and unscientific practices. In contrast, while traditional healers and unqualified informal providers are also used in slum settlements in urban areas, the principal competition to public hospitals arises from formally qualified private providers. The continued need and use of informal unqualified providers throughout the country are an indicator of the failure of the public healthcare system to achieve universal geographical coverage and functional reliability and the compulsion to utilize risky and low-quality care options.

Requirements for Improvement

- **Increase Healthcare Budget Allocation**

Raise the national healthcare budget above the current ~2% of GDP. This will help improve infrastructure, hire more staff, and modernize facilities in both rural and urban areas.

- **Deploy More Medical Professionals in Rural Areas**

Encourage doctors, nurses, and specialists to work in rural settings by offering better pay, housing, and career growth opportunities. This will help address the current shortage and provide better patient care.

- **Strengthen Public-Private Partnerships (PPPs)**

Work with private hospitals and NGOs to provide services like diagnostics, telemedicine, and specialist consultations, especially in underserved regions.

- **Expand Telemedicine and Digital Health Services**

Improve access to platforms like e-Sanjeevani in remote areas. This will connect patients with qualified doctors without the need to travel long distances.

- **Enhance Awareness Campaigns**

Start village-level and community-based awareness campaigns using posters, local media, and health workers. This will inform people about schemes like Ayushman Bharat, JSY, and free immunization.

- **Reduce Overcrowding in Urban Hospitals**

Improve Urban Primary Health Centres (UPHCs) and Mohalla Clinics to handle minor illnesses. This will help decrease the patient load on large government hospitals.

Future perspective of health facilities in urban and rural areas

Digital Transformation of Healthcare

- **Telemedicine and Virtual Consultations**

Telemedicine will play a key role in healthcare delivery. In rural areas, where specialist doctors are often hard to find, teleconsultations will let villagers connect with experts in real time using mobile phones or digital health centers. Urban patients will also enjoy shorter waiting times and fewer hospital visits for minor issues.

- **Digital Health Records for Every Citizen**

Under the Ayushman Bharat Digital Mission (ABDM), each person will have a unique Health ID. This ID will store their medical history, prescriptions, test reports, and vaccination details throughout their life. This will assist doctors across the country in treating patients quickly and accurately.

- **AI and Automation in Hospitals**

Artificial Intelligence (AI) tools will be used for Early detection of diseases like cancer and heart problems, predicting disease outbreaks, automatically reading X-rays, CT scans, and lab reports. This will improve accuracy and lighten the workload for medical professionals.

Strengthening Rural Healthcare Infrastructure

- **Upgrading Sub-Centres to Health and Wellness Centres (HWCs)**

Future rural health services will prioritize preventive care over just treatment. HWCs will provide Screening for diabetes, hypertension, and cancer, Counselling, nutrition advice, and mental health support, Physiotherapy and elderly care, Greater availability of essential medicines and diagnostic tests

- **More PHCs and CHCs with Better Facilities**

The government plans to increase the number of beds, Advanced laboratory facilities, Operation theatres, 24×7 emergency services. Rural hospitals will be better prepared to handle deliveries, accidents, snake bites, poisonings, and infectious diseases.

- **More Trained Healthcare Workers**

Future plans include Increasing the number of doctors willing to work in rural areas, Providing more training for ASHA workers, ANMs, and nurses, Offering attractive incentives and improved living conditions for rural doctors. This will help close the gap in skilled professionals between urban and rural areas.

Improvement of Urban Health Systems

- **Expansion of Urban Primary Health Centres (UPHCs)**

Urban populations are rapidly increasing, particularly in slums and low-income neighbourhoods. Future plans include More UPHCs to serve densely populated areas, Expanded services for mental health, maternal care, and adolescent health, Mobile clinics for homeless and migrant workers.

- **Smart Clinics and Digital Technology**

Urban health centres will incorporate Smart kiosks for basic testing (blood pressure, blood sugar, oxygen level), Online appointment scheduling, Automated medicine dispensing machines, Health apps to monitor chronic diseases.

- **Pollution & Lifestyle Disease Management**

Urban health systems will increasingly address Asthma, COPD, and pollution-related illnesses, Obesity, diabetes, and hypertension, Mental health and stress-related disorders. Better infrastructure will support early screening and treatment.

Focus on Preventive Healthcare & Public Health

- **Large-Scale Screening Programs**

Government programs will broaden screening for Breast, cervical, and oral cancer, Tuberculosis and vector-borne diseases, Nutritional deficiencies among children, Mental health disorders in adolescents

- **Disease Prevention and Health Education**

Future health facilities will concentrate on Hygiene awareness, Nutrition guidance, Promoting physical activity, Family planning and reproductive health education. Preventive health efforts will lessen the hospital burden and enhance community well-being.

Affordable and Accessible Healthcare for All

- **Ayushman Bharat (PM-JAY) Expansion**

More families will qualify for free insurance covering major surgeries and hospital stays. Additional private hospitals will join the program to ensure equal access in urban and rural areas.

- **Growth of Jan Aushadhi Kendras**

These government pharmacies will make healthcare more affordable by offering Low-cost generic medicines, Affordable sanitary items, Cheaper medical devices. This will ease the financial strain on low-income and middle-class families.

- **Integration of AYUSH With Modern Medicine**

Future health systems will blend Ayurveda, Yoga, Naturopathy, Siddha, Unani, Homeopathy. This integrative approach will provide more options for Managing lifestyle diseases, Stress relief, Chronic pain, Preventive health. Both rural and urban health centres will establish AYUSH units.

Advanced Technology for Remote Areas

- **Drone Delivery of Medicines**

Drones will distribute Vaccines, Blood products, Emergency medicines, Diagnostic samples. This will reach remote villages and cut down delays in critical moments.

- **Portable Diagnostic Devices**

Future PHCs and CHCs will use Handheld ultrasound machines, Portable ECG devices, Mobile labs, Rapid diagnostic kits. This will facilitate early and accurate diagnoses even in remote locations.

Public-Private Partnerships (PPP)

The government will increasingly work with Private hospitals, NGOs, Research institutions, pharmaceutical companies

This will enhance Emergency care, Health staff training, Infrastructure quality, Access to advanced equipment. PPP models will significantly contribute to urban and rural health development.

Stronger Emergency Preparedness

Following the COVID-19 pandemic, future priorities will include More oxygen plants in rural hospitals, Improved ICU and ventilator facilities, Enhanced disease surveillance systems, Stronger vaccine production and supply chains, Quick-response medical teams. These measures will help India respond more effectively to future epidemics and disasters.

Reducing the Urban-Rural Healthcare Gap

The long-term vision is to ensure equal access to quality healthcare. This involves Standardizing healthcare quality across regions, improving maternal and child health indicators, eliminating preventable diseases, ensuring safe drinking water and sanitation, Reducing malnutrition. Everyone, regardless of their location, should receive the same standards of care.

5. CONCLUSION

India has made significant progress in building a wide-ranging healthcare system that serves both rural and urban populations. The network includes Sub-Centres, Primary Health Centres (PHCs), Community Health Centres (CHCs), Urban Health Posts (UHPs), Urban Primary Health Centres (UPHCs), district hospitals, and advanced tertiary care institutions. Additionally, programs like Ayushman Bharat, Janani Suraksha Yojana, and National Health Missions have been crucial in improving access to healthcare, especially for economically weaker groups.

Despite these efforts, several challenges remain. Rural areas often struggle with insufficient infrastructure, poor transport connections, a lack of trained medical staff, and limited access to specialist care. Meanwhile, urban healthcare facilities, although more developed, face overcrowding, long wait times, and an uneven distribution of services, which particularly impacts urban slum residents.

To address these disparities, India needs to improve health awareness, increase the number of skilled healthcare workers in rural areas, and expand digital health services like telemedicine.

Promoting community involvement, strengthening public-private partnerships, and boosting investment in primary healthcare will be vital. With ongoing efforts and inclusive planning, India can make significant strides toward achieving the national vision of "Health for All."

A survey across various age groups on the issues of medicine exposed serious challenges in the use of medications by age. These findings can be summarized as follows:

Elderly Population (50+ years):

Polypharmacy, drug interactions, and adherence were some of the commonest problems.

Cognitive decline and poor health literacy often precipitated errors in medication.

Middle-Aged Ad Middle-Aged Adults (30-50 years):

Chronic conditions were common; they led to long-term use of medications.

Stress and lifestyle often necessitated inconsistent adherence.

Young Adults and Adolescents (18-29 years):

Medication instructions were less understood, and self-medication often occurred. There was over-the-counter drug abuse-often for minor complaints.

Children (0-17 years):

Caregivers made dosing errors.

Some formulations were hard to administer.

Most parents knew little about potential side effects of common medicines.

SUGGESTIONS:

For the Elderly: Implement medication reconciliation programs, simplify regimens, and provide clear, accessible instructions.

For Middle-Aged Adults: Patient education and lifestyle interventions to facilitate adherence without becoming overly dependent on medications.

For Young Adults: Targeted campaigns and school-based programs to raise awareness about the safe use of medication.

For Children: Train their caregivers in proper dosing techniques. Improve the palatability of pediatric formulations.

The future of health facilities in urban and rural India looks very bright. With advancements in digital health, telemedicine, artificial intelligence, improved health infrastructure, and increased health insurance coverage, India aims to create a more inclusive, affordable, and modern healthcare system. Strengthening primary care, enhancing preventive health, and closing the urban-rural divide will ensure that every citizen receives timely and quality treatment. The next decade will shift healthcare from being treatment-focused to being

people-cantered, preventive, and technology-enabled, promoting better health outcomes for the entire population.

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