

# HEALTH INFRASTRUCTURE IN RURAL INDIA WITH REFERENCE TO HOSPITALS IN SIVAKASI, TAMILNADU – CASE STUDY

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**ABSTRACT:** *Change- adapt- improve is inevitable in healthcare service. In fact, healthcare is changing at a rapid pace to accommodate changes happening around including needs of consumers, technology and regulatory framework. To sustain any change for the better, we need to adapt accordingly and improve. Infrastructure is an umbrella term covering many activities relating to social, economic and physical overhead capital, that are responsible for creating conducive environment for productive activities in different sectors of an economy. The social infrastructure of a country is very important as it not only presents the human face of economic growth process but represents the very essence of it. A key component of the ecosystem of the healthcare industry is having the requisite physical facilities and infrastructure which are critical to the delivery of quality healthcare services. Indian Healthcare industry is growing at a tremendous pace owing to its strengthening coverage, services and increasing expenditure by public as well private players and its size is expected to touch US\$ 160 billion by 2017 and US\$ 280 billion by 2020. India is a land full of opportunities for players in the medical devices industry. The country has also become one of the leading destinations for high-end diagnostic services with tremendous capital investment for advanced diagnostic facilities, thus catering to a greater proportion of population.. Inadequacies and failures of Government in health sector on the one hand have given rise to the private health sector and on the other hand the demand pull factors have led to rapid growth of the private sector in provision of healthcare services. Unlike in top cities having a well linked chain of private hospitals, the rural and semi-urban areas suffer from abysmal facilities in health care. The institutions falling within the ambit of the private health sector are hospitals ranging from small nursing homes with fewer than five beds to large corporate hospitals and medical colleges, physiotherapy and diagnostic centres, blood banks and the like. In addition the private health sector includes the pharmaceutical and medical equipment industries that are predominantly multinational. The rapidly evolving single specialty centres like Fortis Health care and Apollo hospitals emerge as single specialty chains across a gamut of sub specialties backed by specialized infrastructure and medical personnel's focused on providing quality care to the consumer. Sivakasi, which is famous for fireworks and printing, in Virudhunagar District is prone to Asthma, TB and heart problems and they are prevalent among 90 per cent of the workers of fireworks, matches and printing industries. The hospitals in Sivakasi houses state-of-the-art equipments makes use of the best technology in the medical field and is well supported by a highly enthusiastic, qualified and well-experienced medical team to address the above issues. A Case study of three Private hospitals in Sivakasi was made which made substantial improvements in technology investments, new treatment protocols and practices, which in turn result in improved outcomes. This paper makes quantitative examination of the degree to which sampled hospitals are improving in quality and efficiency over time. Physical infrastructure is analyzed on aspects like space availability, equipments, ambulance facility, intensive care unit, pharmacy and basic facilities like water supply and power supply.*

**Keywords :** Hospitals, Healthcare, Infrastructure.

## Introduction

Health is a holistic process related to the overall growth and development of the nation. Public health refers to the health status of all people of the country. Development of health Infrastructure includes: Hospitals, doctors, nurses, other paramedical professionals, beds, equipments, required in hospitals and a well-developed pharmaceuticals industry. Change - adapt- improve is inevitable in healthcare service. In fact, healthcare is changing at a rapid pace to accommodate changes happening around including needs of consumers, technology and regulatory framework. To sustain any change for the better, we need to adapt accordingly and improve. Infrastructure is an umbrella term covering many activities relating to social, economic and physical overhead capital, that are responsible for creating conducive environment for productive activities in different sectors of an economy. The social infrastructure of a country is very important as it not only presents the human face of economic growth process but represents the very essence of it. A key component of the ecosystem of the healthcare industry is having the requisite physical facilities and infrastructure which are critical to the delivery of quality healthcare services. Indian Healthcare industry is growing at a tremendous pace owing to its strengthening coverage, services and increasing expenditure by public as well private players and its size is expected to touch US\$ 160 billion by 2017 and US\$ 280 billion by 2020. India is a land full of opportunities for players in the medical devices industry. The country has also become one of the leading destinations for high-end diagnostic services with tremendous capital investment for advanced diagnostic facilities, thus catering to a greater proportion of population. Inadequacies and failures of Government in health sector on the one hand have given rise to the private health sector and on the other hand the demand pull factors have led to rapid growth of the private sector in provision of healthcare services. Unlike in top cities having a well linked chain of private hospitals, the rural and semi-urban areas suffer from abysmal facilities in health care. The institutions falling within the ambit of the private health sector are hospitals ranging from small nursing homes with fewer than five beds to large corporate hospitals and medical colleges, physiotherapy and diagnostic centres, blood banks and the like. In addition the private health sector includes the pharmaceutical and medical equipment industries that are predominantly multinational. The rapidly evolving single specialty centers like Fortis Health care and Apollo hospitals emerge as single specialty

chains across a gamut of sub specialties backed by specialized infrastructure and medical personnel's focused on providing quality care to the consumer.

### Health Infrastructure In India

Indian government has given priority to healthcare and is making significant investments to improve the infrastructure and delivery mechanism jointly with the state governments through National Rural Health Mission (NRHM). India is adopting Three Tier System of Health Infrastructure. The Three Tier System of Health Infrastructure can be seen below:

#### Primary Health Care

- Concerned with prevailing health problems and methods of identifying, preventing and controlling it. Key areas are - Proper nutrition, adequate supply of water, basic sanitation, maternal and child care immunization against major contagious diseases, promotion of mental health and promotion of essential drugs.

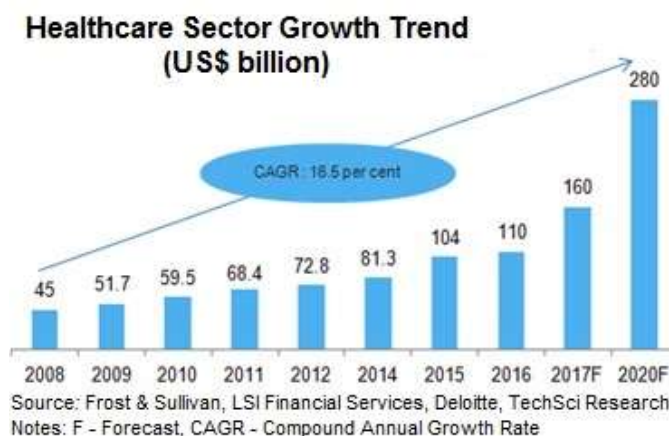
#### Secondary Health Care

- Hospitals which have better health care facilities (such as surgery and diagnostics). They are mostly found in district headquarters and in big towns

#### Tertiary Health Care

- Includes all those medical centers and health care which give advanced medical care in case of complicated health problems. It also includes many premier institutions which not only impart quality medical education and conduct research and provide specialized medical care.

India is a land full of opportunities for players in the medical devices industry. The country has also become one of the leading destinations for high-end diagnostic services with tremendous capital investment for advanced diagnostic facilities, thus catering to a greater proportion of population.



Besides, Indian medical service consumers have become more conscious towards their healthcare upkeep. Healthcare industry is growing at a tremendous pace owing to its strengthening coverage, services and increasing expenditure by public as well private players. During 2008-20, the market is expected to record a CAGR of 16.5 %. The total industry size is expected to touch US\$ 160 billion by 2017 and US\$ 280 billion by 2020. As per the Ministry of Health, development of 50 technologies has been targeted in the FY16, for the treatment of disease like Cancer and TB.

### Rural Health Care In India

73% of the country's population lives in rural areas and 26.1% is below poverty level. While on one hand, India lacks strong healthcare infrastructure, on the other hand, the country has several inherent weaknesses in its healthcare system. Hospital infrastructure is playing a larger and more influential role than ever before in hospitals. However, many hospitals cannot afford to have developed infrastructure. This is particularly true for smaller, rural hospitals that have few resources to develop and maintain a technological infrastructure. At the same time, there is an increasing demand for health services in rural regions. This growing need for health services combined with the lack of resources is forcing many rural hospitals to search for alternatives to designing, deploying, and maintaining their own infrastructure.

Healthcare sector is becoming one of rural India's largest sectors - both in terms of revenue and employment. Healthcare comprises hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance and medical equipment. The Indian healthcare sector is growing at a brisk pace due to its strengthening coverage, services and increasing expenditure by public as well private players. Indian healthcare delivery system is categorised into two major components - public and private. The Government, i.e. public healthcare system comprises limited secondary and tertiary care institutions in key cities and focuses on providing basic healthcare facilities in the form of primary healthcare centres (PHCs) in rural areas. The private sector provides majority of secondary, tertiary and quaternary care institutions with a major concentration in metros, tier I and tier II cities.

Despite India's recent rapid rate of growth, the country's economy is the provision of health care is still a challenge especially in the rural areas. One major problem faced in Tamil Nadu is due to poor health policies and inadequate training of the medical personnel. One of the major causes of problem when dealing with health care in Tamil Nadu and other regions is lack of adequate access to health care. This is based on the fact that most of the health care centres are aimed at benefiting the urban dwellers and the upper class. While the health care in urban areas

has been provided by properly equipped dispensaries and hospital that are managed by corporate and other organizations, health services in rural areas have inadequate facilities leading to high rate of child morbidity.

### Sivakasi - Overview

Sivakasi is a city and municipality in Virudhunagar District in the Indian state of TamilNadu. The town is known for its firecracker, match and printing industries. The industries in Sivakasi employ over 25,000 people with an estimated turnover of ₹ 20 billion (US\$300 million). Sivakasi has a dry weather, making it suitable for dry crops like cotton, chilies and millets. In 2011, Sivakasi had a population of 71,040 and including the floating population it crosses more than a lakh. Sivakasi, which is famous for fireworks and printing, in Virudhunagar District is prone to Asthma, TB and heart problems and they are prevalent among 90 per cent of the workers of fireworks, matches and printing industries. The hospitals in Sivakasi houses state-of-the-art equipments makes use of the best technology in the medical field and is well supported by a highly enthusiastic, qualified and well-experienced medical team to address the above issues. A Case study of three Private hospitals in Sivakasi was made which made substantial improvements in technology like space availability, equipments, ambulance facility, intensive care unit, pharmacy and basic facilities like water supply and power supply.

### Research Methodology

A private hospital or clinic is owned and governed by a person or a group of people who are managing the whole finances on their own. The whole funding process and the administration, nurses, all the doctors' fees and all the equipment, everything is under control of that group of people. Some of the sample hospitals we considered were as follows

- Meneka Hospital
- Lakshmi Hospital
- Mathi Integrated Healthcare Centre

An ethnographically inspired interpretive case study was conducted at all the sample private hospitals. The data was collected using observations, semi-structured interviews, informal conversations and documents. These documents included the hospital's web site and paper and electronic versions of the health records used at the hospital. Some additional follow up information was also obtained by email correspondence with contacts at the hospital after the formal data collection period was finished. 29 semi-structured interviews were conducted in English and in Tamil with 23 different actors, including hospital Managing Director, Medical superintendent, consultants and patients. Interviews lasted from 20 to 60 min, for an average of 40 min per interview. Approximately 30 hrs. of interviews were conducted in total. The details of the interviews are contained in Table 1.

Table1. Interviews conducted during the study.

Actors	No.	No. of interviews
Managing Director	2	4
Pharmacists, Lab technicians	2	2
Consultants-Physicians, Pediatricians	5	7
Nurses	4	6
Patients	10	10
Total	23	29

### Facts and Findings Of The Study

#### a) Domination of Private hospitals :

Private hospitals have to provide outstanding service due to the competition of other medical institutes. Research has shown that most of the people go for private hospitals and they prefer them over any other option. The reasons vary; in private hospitals all the equipment is modern and innovative which means that they are reliable, of good quality and even better. People tend to think that private hospitals are much more costly but in fact it is not true in most cases. All the sample private sector hospitals in Sivakasi are small establishments and have less than 25 beds with average bed strength of 10 beds. Only two institutions are providing specialty and super-specialty care while no hospital is corporate form. The private hospital prefers to set up facilities in the more prosperous areas.

#### b) APL vs BPL preferences:

For inpatient care for all ailments 60 per cent of the below poverty line (BPL) families tend to use government hospitals and while an equal proportion of above poverty line (APL) families prefer private hospitals. The cost of inpatient treatment in the private sector is much higher. This has been cited as the major reason for poorer sections seeking inpatient care in government institutions

#### c) Negative perception among public over Government hospitals:

It has been found that government facilities are not well perceived by people at the grassroots. The in patients consider public healthcare services as "inappropriate" and "corrupt". They have to stand in long queues and insufficient staff. To do away with the sufferings they prefer Private hospitals, the alternative, and a favourite though high treatment cost is to be met.

#### d) Perception of consultants:

The consultants have stated that despite prohibitive costs, private care was perceived to be superior to public healthcare, especially for diseases like diabetes. They make themselves available round the clock and spend time with the patients and talk to them. The Managing director has proudly shared that they have made remarkable improvement in health infrastructure in their clinics. They admitted that health literacy remained low in some areas in Virudhunagar district, especially knowledge related to non-communicable diseases like diabetes. To address that they have appointed staff nurses.

#### e) Constraints over availability of physicians:

The Managing directors have stated that Qualified and registered private sector doctors or private sector institutions are not readily available in a rural area like Sivakasi because people do not have ability to pay and there is a lack of social infrastructure. Thus, the



population in these areas where health care needs are the greatest have very poor access to well-equipped, multi-speciality private hospitals. In spite of the abundant supply of registered physicians in modern system of medicine, unqualified persons still provide health care especially to the poorer segments of the population living in urban slums and remote rural areas.

**f) State of private institutions:**

Majority of private sector institutions in Sivakasi are single doctor dispensaries with very little infrastructure or paramedical support. They provide symptomatic treatment for common ailments and because they are conveniently located and easily accessible, patients from even below the poverty line utilize them and pay for their services. These private practitioners do not have access to updated standard protocols for the management of common ailments; hence the quality of care they provide is often sub-optimal. In private medical institutions there are no waiting lines for operations and other medical procedures, all is arranged within a couple of days as opposed to the long waiting lines in public hospitals as everything is systematically maintained electronically. They also offer "high technology" services, such as trauma, medical surgical ICU, neonatal ICU, CT or MRI, cardiac catheterization, cardiac surgery or transplant services.

The nurses pointed out even the government doctors suggested that they had referred patients to private hospitals for a number of reasons. For instance, in taluk-level hospitals, there were no specialists like anaesthetists. Similarly, the infrastructural facilities for performing complicated surgeries were inadequate.

Patients stated that the kind of individual care and attention given to the patient in a private hospital is undeniable. Many complicated surgeries are also performed at par with medically advanced countries. Hospitalization standards at a private hospital are like a five star hotel with private wards and personal care. In public hospitals, patients are hospitalized in a room with another two to four patients and do not have the privacy they deserve to have. In private hospitals there is a less chance of getting secondary infections after surgery than public hospitals due to cutting-edge equipment and excellent intensive care units. Since no one wants to risk their lives and get into more trouble caused by even the slightest of negligence on the part of the medical treatment, private hospitals prevail to be popular.

**Summary of Patients' Perception Over Private Hospitals**

- State of the art Hospitals with Excellent Infrastructure with largest pool of highly qualified and skilled doctors and well trained & caring nurses and paramedical staff
- Faster access to treatment with nearly no waiting time.
- Choice of when and where they want to be treated.
- Choose their own private health care doctor or a private specialist.
- Treatment and consultation can be done quickly and at a time convenient to them.
- Payment is either by private insurance or they can pay directly by the 'self-paying' method.
- Latest and highly advanced medical devices
- Affordable treatment at costs just 25%-30% of what it would cost in nearby cities say Madurai, Coimbatore
- Fluent local languages speaking doctors, nurses and paramedical staff .Hence no language problem for neighboring state patients
- Ultramodern pharmaceutical facilities adjacent to clinics
- Large numbers of private hospitals in Sivakasi are trying to get accredited with the National Accreditation Board for Hospitals & Healthcare Providers (NABH) and Joint Commission International (JCI).

**Challenges**

**a) Infrastructure and administration challenges:**

Increase in the number of hospitals around Sivakasi needs special attention. Affordable essential drugs, medical equipment, and tests and surgeries, are also necessary. This can become a reality only with the support of all stakeholders, which include Government agencies, private initiatives, entrepreneurs, pharmaceutical companies, and insurance companies. An affordable and effective health insurance scheme for all citizens, among other things, can recourse these challenges. There's no doubt a hospital administrator's job is difficult and demanding, and it's only getting tougher. As competition and expenses increase, hospital executives must prepare administrators to effectively lead during a time of transformational change in our healthcare system.

**b) Shortage of doctors:**

Sivakasi faces a shortage of Speciality doctors, nurses and surgeons and a large number of paramedical staff. There is a real shortage of healthcare professionals, and it's hurting the profitability of hospitals as they pay more for every employee they hire - registered nurses, licensed practice and licensed vocational nurses, attendants, physicians and surgeons. With this in mind, hospital administrators must put a plan in place to address the shortage and compete for the best employees. As they compete, they must be skilled at recruiting, hiring and retaining qualified healthcare professionals.

Hospital administrators need to build strong relationships with Colleges that offer healthcare-related degrees in their local communities. Additionally, they must make working at their hospital attractive, which means thinking beyond competitive pay and benefits to ensuring each individual employee feels connected to the hospital and has a passion for working for the organization. The hospital administrators referred that with the rapid growth of specialty hospitals, physician-run outpatient surgery centres and diagnostic centres, traditional hospitals are facing increased competition. To compete for patients, hospital administrators must be prepared to set their hospitals apart through a specialized care strategy. They must take time to investigate other specialty healthcare providers in their local communities, identify areas of opportunity and put a strategic plan in place for building renowned specialty practices.

**c) Need for More Beds:**

In India, hospitals are mostly located in metropolitan cities, and not in rural areas or emerging cities. The current strength of hospital beds is meagre in rural areas and more beds needs to be added in the near future, keeping in mind the sheer geographical spread and industrial locale of the place.

### Suggestions

The medical superintendent has pointed out that few private hospitals have been found to be using inappropriate, unnecessary and expensive diagnostic tests and therapeutic procedures as well as inappropriate and unethical treatment practices. Other problems reported include use of unqualified service providers, overuse of diagnostic and therapeutic measures leading to exorbitant costs. There is no attempt to screen patients for complications and refer them to the appropriate level of care, rationalise drug use or contain the costs of treatment. These problems have to be addressed through appropriate interventions, including CME to update the knowledge and skills of practitioners, evolving and implementing standards for quality of care and operationalisation of an appropriate grievance redressal mechanism.

**a) Scaling up of Private hospital chains:**

Government hospitals are not a solution to the present problem. To tackle the above mentioned challenges, private hospital chains should set base in emerging cities to provide health-related infrastructure.

**b) Investment friendly policies:**

The Government should come up with investment-friendly policies to Private health sector. Tax holidays, land bank to support builders of hospitals, special interest rates and loans from banks, benefits for setting up of private practices, hospitals, diagnostic centres and pharmaceuticals, can change the face of healthcare infrastructure in India. In the developed market, health insurance companies can compete with each other. They can also negotiate with hospitals for the quality of services offered to the patients. Eventually, a better competitive market will reduce costs and result in better services. Policies governing health infrastructure need to be in black and white, and not left to the discretion of the Government.

**c) Digital drive :**

They can implement the E-health initiative, which is a part of Digital India drive launched by Prime Minister Mr.Narendra Modi, aims at providing effective and economical healthcare services to all citizens. The programme aims to make use of technology and portals to facilitate people maintain health records and book online appointments with various departments of different hospitals using eKYC data of Aadhaar number.

**d) Medical tourism:**

One cannot ignore the possibilities of Medical Tourism. It is considered to be a supplementary market emerging within the urban health portfolio. India is emerging as a popular medical tourism destination, thanks to its relatively low costs and better success rates. It is reported that the cost of treatment in India is one fifth of that of the US. Development in Medical Tourism depends on the advancement in health infrastructure in India. The revenue earned from Medical Tourism could help subsidize medical costs for poorer patients.

**e) Medical college :**

Easing of regulations in opening and governing of medical colleges is another policy change warranted in this sector. In Virudhunagar district no medical college is functioning and Government should support to grant licence for the same.

**f) Data driven interventions by government:**

Better compilation of per capita expenditure data of patients and availability of beds at the regional or local levels within states can help investors set up hospitals for the needy. The Government should demarcate health circles and priority areas for intervention, based on available information, indexed with health standards of each particular

**g) Support for entrepreneurs:**

A major bottleneck for entrepreneurs who seek to enter the health market is the lack of access to banking, to raise the required capital. Health Circles can be auctioned, similar to the mobile phone market, ensuring fair competition amongst bidders and financial support from the Government.

### Opportunities For Healthcare Infrastructure

- Additional 3 million beds needed for India to achieve the target of 3 beds per 1,000 people by 2025
- Additional 1.54million doctors and 2.4 million nurses required to meet the growing demand for healthcare
- Investment of USD 86 billion required to achieve these targets
- Over USD200 billion is expected to be spent on medical infrastructure by 2024
- Tamil Nadu Chief Minister's Comprehensive kappittut program and world-class medical service will be provided to all people. This plan will benefit about 1.34 million households.

### Conclusion

Improved urban health infrastructure is definitely the need of an emerging urban economy like India. This should be met to help the majority of patients in emerging cities across India. With 60-80 per cent of healthcare sought in the private sector, and households contributing 4-6 per cent of their incomes to the same, there will be a whopping Rs 400-600 billion healthcare market in India by 2040. Though hospitals differ, their overarching needs for the future are similar: All hospitals want to achieve the highest quality care at lower costs; hospitals are required to conduct community health needs assessments and demonstrate their attempts to improve community health; and all hospitals will have to work toward developing integrated solutions to keep their patient population and surrounding communities healthy. Only by having a strong infrastructure designed around population health goals can hospitals and care systems implement effective and sustainable population health management. Most hospitals in Tamilnadu have yet to optimize and integrate population health management into their daily operations. The findings from this study provide insight into the field's development and a baseline to assess the infrastructure and staffing for hospital-based population health initiatives. The data will enable The Medical Council of India and the Health and Family Welfare Department, by Government of Tamil Nadu, to support hospitals as they adopt infrastructures to improve population health in their communities.

**References:**

- [1] [www.ibef.org](http://www.ibef.org)
- [2] [www.pwc.com/india](http://www.pwc.com/india)
- [3] [www.lakshmihospital.in](http://www.lakshmihospital.in)
- [4] [www.menakahospital.com](http://www.menakahospital.com)
- [5] [www.mathiintegratedhealthcentre.com](http://www.mathiintegratedhealthcentre.com)

