

Seven Pillars of Inclusive Ecosystem - Transforming Healthcare Special reference to MSME & SME sectors

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ABSTRACT

Purpose: *The present paper analyzes the inclusive approach of the MSMEs (Micro, Small and Medium Enterprises) and the Seven pillars that play a significant role in promoting Indian health care to achieve Sustainable Development goals. The MSMEs & SME focuses on designing and manufacturing a wide range of medical products or devices, innovative drugs, COVID-19 related products act as a catalyst to bring a social-economic transformation of rural and urban by delivering a new wave ecosystem and also by the new generation entrepreneurship. MSME contributes one-third to India's GDP and is the crater of opportunities, employment and contributes to women empowerment. Digital India promotes ICT-Artificial Intelligence, Internet of Things, Blockchain technology, Make in India in manufacturing indigenization health care innovation to withstand global competition in healthcare products to meet requirements of the society and global demand through the Government Schemes and policies with Partnership and Collaboration Model with support of Unicorn startup to bring the private sector and NGO in providing affordable healthcare infrastructure facilities under National Health Policy, Ayushman Bharat PM-JAY, Budget and Niti Aayog has proved more funds and promoting the health care. The medical device industry contributes very significantly to the top 20 markets for medical devices. MSME contributes 6.11% of the manufacturing GDP, 24.63% of the GDP service activity, and 45% of overall export. The medical technology through Digital India is projected to reach US \$50 billion by 2025 band ranked 10th in the Medical Tourism Index (MIT) for 2020-21. Out of 46 destinations, the healthcare market in India is expected to reach US \$ 372billion by 2022 and India is among the top 12 destinations for biotechnology and 100% FDI allowed under the automatic route and the largest provider of generic drugs.*

Design/methodology/approaches: *The study is based on secondary data gathered from diverse sources such as articles published in Journals, government and other web site, newspapers, etc.*

Findings and results: *Indian economy will contribute to the GDP of the country. Public health is the major factor that we need to take care of then only there will be a possibility of progress in the country.*

Originality/value: *This study analyzes the seven pillars of healthcare that can be transferred to the healthcare industry and society. The seven pillars are "Economic Growth, Innovation, Digital Technology, Government Scheme and Budget, SME & Unicorn Entrepreneur, healthcare infrastructure and Partnerships and collaboration" are they provide strength to healthcare. The public health care infrastructure in both rural and urban areas is not up to the mark expect private health care. We suggest that more focus on providing primary healthcare*

with more staff for the large population and more tax rebates on health expenditure and health care schemes to be provided to all sections of the society.

Type of Paper: Research Analysis.

Keywords: MSMEs/SMEs, Healthcare Sustainable Development goal, Unicorn startup, Make in India, Digital India, GDP, Government Scheme and Policy. Innovation, Partnerships and collaboration

1. INTRODUCTION :

Micro, Small and Medium Enterprises (MSME) are a very important and dynamic sector. It is one of the major contributors to the Gross Domestic Product (GDP) of the country and MSMEs are the instruments of inclusive growth by widening their domain across various sectors of the economy including health care. During the pandemic, the government has taken initiatives to support the MSMEs in the production and manufacturing of lower-cost medical items. India has the second-highest population in the world and medical infrastructure is highly associated with a country's economic growth. Revised MSMEs Act pushes the MSMEs towards local production and pushing the nation to self-sustenance and also investment limit has increased additional criteria of turnover to be introduced and the distinction between manufacturing and service sector to be eliminated. It gives scope for inclusion of private MSME Multi-specialty hospitals, nursing homes, diagnostic centres to create adequate health infrastructure to cater majority of the population and they can register to secure emergency working capital and Fund of Fund to expand MSME size and as well as capacity in tier II and III cities. SIDBI will provide loan products for MSME healthcare Industry Production and Service. The healthcare sector comprises Medical tourism, Hospitals, Health Insurance, Medical devices, Medical Equipment, outsourcing and comprises both private and Public sectors. Indian Startups offers a solution in the form of healthcare products, services and accelerate the technological innovation to withstand global competition by introducing "healthcare products include medical equipment, instruments and services as well as for biotechnology, diagnostic laboratories" (Denis Horgan, et al. (2018) [1]). Medical technology focuses on designing and manufacturing a wide range of medical products and devices. Health infrastructure advanced machines, hospitals, specialist doctors, nurses, paramedical staff clinical labs, lab technicians, X-ray technicians, phlebotomists. Pharmaceutical industries are essential for strengthening health care so the National Health policy launched in 2017 to boost the health care infrastructure and Pradhan mantra Ayushman Bharat. Health infrastructure mission to address the public health infrastructure in both urban and rural areas of the country along with medical education system for training health care workers. To encourage pharm products government introduced production-linked incentives and Bulk Drug and Medical device parks for indigenous production of medical devices, drugs, surgical, diagnostics at an affordable price for the benefit of the society.

All kinds of medical services such as hospitals, nursing homes, clinics are eligible for MSME registration under MSME Development Act 2006 and they can avail the facility for the creation of infrastructure of the health care industry for better health and wellbeing of people. Health system requires a well-distributed, workforce, hospital, paramedical (Saha, et al. (2015) [2]), health infrastructure includes hospital buildings, medicines, health equipment, the laboratory is vital for economic development and manpower development (Gouda, et al. (2013) [3], Aswal, D. K. (2020) [4]). Digital health care technology to improve quality, accessibility, affordability with use of IoT, AI, 3D printing, Robotics in area of telehealth, health, medical records, remote diagnostics and health apps enables healthcare ecosystem focusing on ensuring care for patients. Health is a yardstick of human wellbeing it includes physical as mental. Indian health care sectors consist of Hospitals, Insurance, Pharma, diagnostics, Medical Tourism, and Medical devices and Equipment.

2. REVIEW OF LITERATURE :

To know the current status of challenges of healthcare sector with special reference to MSME & SME sectors, we have made an elaborative review of current scholarly publication and the results are depicted in table 1.

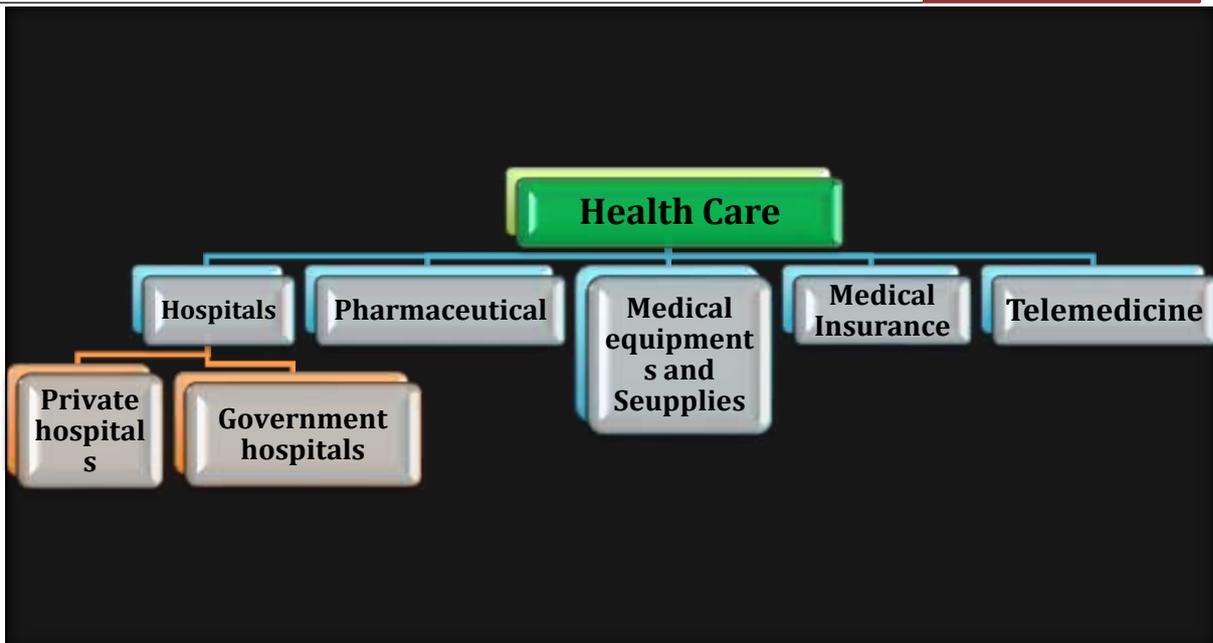


Fig. 1: Block diagram representing a generic Healthcare sector

Table 1: Review of available literature with authors and focus/outcome

S. No.	Focus	Authors & Reference
1	Research Article titled “Seven Pillars of Ecosystem Management”, has aimed at encapsulating the various perspectives of ecosystem management. Through this study, the author has opined that ecosystem management is not just an oxymoron or a concept of revolutionary but it is a well-established paradigm from current to revolutionary change.	Robert, T. Lackey [5]
2	In their Research Article titled “Intellectual Capital-based performance improvement: a study in the healthcare sector” have aimed at examining the intellectual capital impact on the performance of healthcare organisations in the Italian healthcare system. For this purpose, they carried out the analysis to find out the right placement resources as well as exogenous variables which influences the level of performance and such exogenous variables incidence has been created through the application of linear regression. Further, after the studies conducted by the authors, the results revealed that the Intellectual capital components of the organisation's performance have been influenced and that can be made applicable for defining the policy rules of allocation of resources in the sector of healthcare. In conclusion, the authors found that there is an innovative link among healthcare performance in connection to efficiency and Intellectual capital aligning the resource management for the rest of the future strategies by providing new decision-making approaches.	Simona Alfiero, et al. [6]
3	In their Research Article titled “Indian Unicorns and Covid 19: An Assessment and Prospects” have aimed at examining the growth and prospects of Indian Unicorns as well as to assess the policy initiatives taken by the government of India to establish entrepreneurship culture thereby boosting the start-up ecosystem in India. In the opinion of the authors, India can outpace other countries in future by bringing out Digital India with more digital infrastructure and software development. It is observed by the authors that from the year 2011 India has been scaled up in the start-up ecosystem and has become the 3rd largest start-up hub	Neeta Tripathi and Dhruv Pratap Singh [7]

	all over the world. In the opinion of the authors due to the covid-19 pandemic, the augmented pace of start-ups has initiated to enter the unicorn club and many venture capital investors and other experts have started to perceive unicorns.	
5	In their research article titled “Cost-effective healthcare developments and Research Opportunities in China, India and Singapore” have attempted to disclose the major service developments in India, China and Singapore by showing the various perspectives on how cost-effective service excellence can be accomplished in healthcare. Through this study, the authors revealed that there are more advanced digital platforms and technologies in China than compared to western economies concerning their user acceptance, market penetration and application. It is also observed by the authors that there has been no litigation risk, interlocking stakeholders or excessive regulation in the large healthcare market which is of a greater benefit to India. According to this study, Digital Platforms and related technologies seem more advanced in China than in most Western economies in terms of their application, user acceptance and market penetration. India has extremely high volumes that met focused service factory and frugal service innovation approaches, and Singapore is a tightly controlled healthcare market with high levels of discipline, both facilitated by its culture and small size. The paper also opines that several business models and frugal service innovations related to CESE have had phenomenal success in India, particularly in the healthcare context.	Jochen Wirtz, et al. [8]
6	In their Research Article titled “Digital Dimension of Indian Healthcare Sector: A Review ” has discussed the process of digitalization along with the fact that big data analytics can create a good service to patients, healthcare givers and other insurance companies. As observed by the authors there has been an extended range of digital services viz., telemedicine, wearables, electronic medical reports and m-health which are changing the experience of the customers and also bringing an overall system of the sector a bigger change. As opined by the author the healthcare sector has great opportunities and digitalization facilities to grow in the field and also there is a powerful human impact in the field of treatment or medical care. Hence author advises bringing change in the sector that is easily acceptable, adaptable and functional by the stakeholders. On the other hand, the author has also touched upon the helping factor of digital technology to the patient to watch and control their health. Further authors suggest an amalgamation of healthcare and digitalization which brings a fresh new experience of health treatment to its patients.	Garima Sainger [9]

2.1 Related works :

- (1) India Global Business reports that as of May 2021 [10], RBI schemes in India have posed major advantages for healthcare MSMEs. The Central Bank has announced several measures to help the country to ramp up the infrastructure of the healthcare industry in India. There is a \$6.7 Billion on-tap liquidity window for the healthcare sector as per the new rule. This comes with a tenor of up to three years at the repo rate till March 31, 2022. This scheme aims at providing fresh loans by the banks to companies engaged in manufacturing, imports and supplies of vaccines, COVID related medicines, medical devices and oxygen generators.
- (2) In an article by Lalit Mistry, the Director of Healthcare, KPMG (India), [11] has mentioned in this article recently that there has been some significant advancement in the field of healthcare in India. He has also mentioned that there has been employed as also revenue and is growing at a brisk pace in the large sectors and has been reached out through many public and private providers. As observed

public healthcare is mainly focusing on the primary health issues like reducing mortality and morbidity due to many communicable and non-communicable diseases. On the other hand, the private sectors are concentrated in tier I and tier-II cities. With the increase of the Covid 19 pandemic both private and public sectors have been finding it very hard to manage the healthcare systems and have been naturally shaken. Indian Private healthcare sectors played a major role in providing support to government requirements like testing, isolation beds, treatments, staff and other required equipment for the treatment of Covid 19 at Government hospitals. Indian private healthcare sectors have been of great help and played a significant role by taking care of 60% of the inpatients. When the author looked into the investment sector in the health care sector of India the major factors which encouraged future investments are medical infrastructure in Tier II and III cities, health insurance awareness, Government policies, medical tourism and use of technology. Beyond all these factors it has been observed that there has been increased access to insurance and lifestyle-related diseases in the Indian healthcare market which is expected to reach US \$ 372 billion by the year 2022. Further, the Indian Government is aiming to increase healthcare spending to 2.5% of GDP by the year 2025. It is opined that the covid 19 pandemic has bought a transformation to both government and private sectors to plan further to bring a great and huge change as well as development in the sector of the healthcare system. Hence more focus is on telemedicine services and new guidelines have been issued by the Government with respect to telemedicine legal practice in India.

- (3) According to Niti Ayog's report 2021, since 2016, [12] the healthcare industry in India has been growing at a Compound Annual Growth Rate of around 22%. Concerning employment generation and revenue, the Healthcare sector has become one of the largest sectors of the Indian Economy. The National Skill development corporation has generated approximately 500,000 jobs every year. The report also emphasizes the emergence of Public-Private Partnership models in India's healthcare sector. The country's relative cost competitiveness and availability of skilled labour are also making it an increasingly favoured destination for Medical Value Travel. There are several avenues for the MSMEs, Public-Private Partnership companies and SMEs to invest in technological advancements such as Artificial Intelligence (AI), wearables and other mobile technologies. The following figure shows the Annual Growth Trend of India's Health Care Sector.

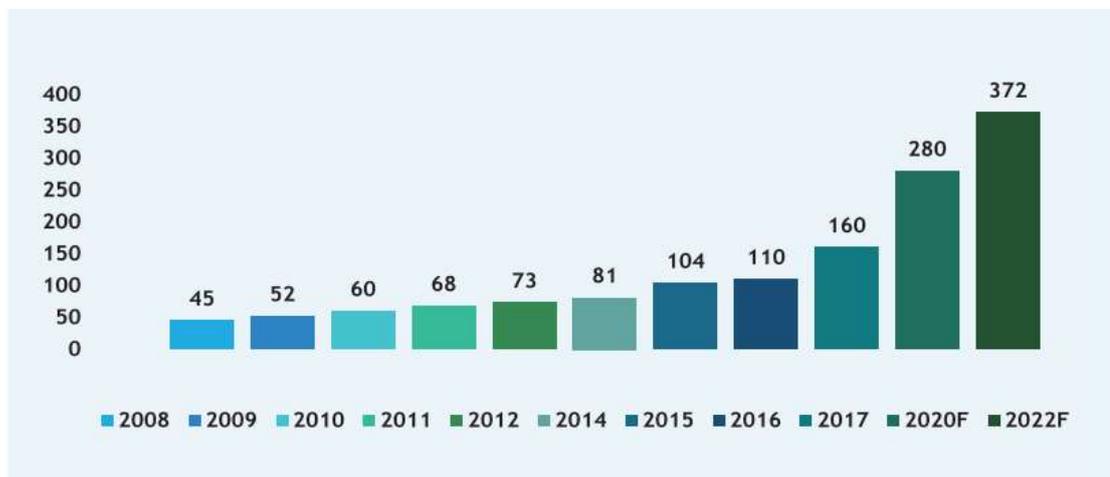


Fig. 2: Growth Trend of India's Health Care Sector (USD) [12]

Source: NITI AYOG Report 2021 [12]

- (4) According to the India Brand, Equity Foundation report – December 2021, [13] the Healthcare market in India is expected to reach US\$372 billion by the end of 2022, driven by rising income, better health awareness, lifestyle diseases and increasing access to Insurance. The Government is also planning to raise manpower by making sure there is the availability of a large pool of well-trained medical professionals in the country. Depicted below is a chart showing how India is at an advantage point at present.



Fig. 3: India is at an advantage point at present

Source: India Brand Equity Foundation, December 2021 [13]

(5) The Wharton University of Pennsylvania, in a report (Jan 2020) titled “How Technology is Changing Health Care in India”, has identified the Three Bs of Health care, viz, “Biology”, “Bytes” and “Bandwidth. Biology is where technology could help lower the costs of genetic testing and facilitate new business models. Bytes refer to the cost of computing and bandwidth refers to the digital communications along with India’s growing tele-density resulting in the expansion of health care access for rural India. Artificial Intelligence-based predictive Inventory model developed by “1 mg” company has found its way for overcoming the frustrating experience in trying to match consumer demand with supplies from Pharmacies [14].

3. RESEARCH GAP :

Several analyses and observations have been made by researchers and emphasize on growth and development of the Healthcare sector of the country. But this article gives detailed information about how the seven pillars of inclusive ecosystem boost the Healthcare sector of the country through digital technology, ICT, artificial intelligence internet of things, blockchain technology and many national Healthcare policies Ayushman Bharat, PM-JAY and Niti Aayog. It has focused on the development and growth of health tech startups in India contribution of Healthcare sectors from last decades through creating opportunities for low-cost medical devices highlights of national health policy 2017.

4. OBJECTIVES :

Health care sectors are very crucial for the growth and development of the Nation and providing the better health infrastructure through Public-Private celebration with Healthtech MSME/SMEs startups support and policy reforms to enhance the quality of life of both rural and urban population at Affordability, Availability, and Accessibility and to scale up the healthcare.

- (1) To recognize the segment of health care sectors in transforming healthcare.
- (2) To Examine the Impact of Seven pillars of Health care sectors.
- (3) The Performance of Healthtech MSMEs/SMEs Startups in healthcare.
- (4) To find out the transformation of healthcare sectors in urban and rural areas by the Government Schemes and Policies.

5. NEED OF THE STUDY :

- It is required to know about digital technology that will make easy accessibility and affordability of Healthcare to Indian citizens.

- It is important to create awareness about the seven pillars of Healthcare that helps to attain sustainable development of the country.
- This article explores various innovations in Healthcare and boosts the growth of MSM is and s me y manufacturing different medical products and services.
- The fundamental objective of this study is to focus on the Healthcare sector of the Indian economy which consists of medical tourism medical devices and types of equipment Health Insurance medical infrastructure etc.,
- Many initiative measures and policies have been launched by the government of India in this health sector such as Emergency Response and Health Systems Preparedness Package, Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY), Pradhan Mantri Swasthya Suraksha Yojana (PMSSY), Medical Education, Efforts of Ministry of AYUSH

6. SCOPE OF THE STUDY :

The content of the Arctic article deals with 7 pillars of Healthcare consists of innovative digital technology, insurance, Healthcare infrastructure MSMEs and MSE entrepreneurship. Different Government Health Care schemes policies and it introduced by the government of India Healthcare startups advancement of Healthcare facilities in both rural and urban areas etc. are covered under this study which promotes the sustainable development of the country.

7. RESEARCH METHODOLOGY :

The study is based on the quantitative and qualitative secondary data gathered from various governments and other websites, reports and various published articles.

7.1 Seven Pillars of Health Care:

Seven pillars of health care are listed out as below:



Fig 4: Seven Pillars of Health care

8. THE PERFORMANCE OF HEALTHTECH MSMES/SMES STARTUPS IN HEALTHCARE:

8.1 INDIAN HEALTHCARE SECTORS:

Healthcare has become one of the largest sectors of the Indian economy, in terms of both revenue and employment. It consists of hospitals, medical Tourism, medical devices and equipment, health insurance, clinical trials, telemedicine and medical tourism. The Indian health sector is diversified and healthcare sectors in adopting digital innovations, data analytics, AI, 3D printing, Public-Private collaborations, and healthcare infrastructure in both urban and rural areas supported by NGOs, SMEs & MSMEs prerequisite for the growing economy. Table 2 Impact of health care sector in terms of size, number of jobs offered, amount of investment And Health tech startups. As per the report, there is a drastic change in the growth and development of the health care sectors in the country. It can be indicated in terms of the generation of new jobs, health tech startups.

Table 2: Impact of health care sector

Years	Healthcare sectors	Contributions
2022	Size of the health care sector	\$372 billion
2017-2022	Number of New Jobs generated	2.7 million
2017-2022	To improve the healthcare	\$1.7 Billion
2017-2021	Health Tech startups	1,200 Numbers
2020	GDP	1.6%
2025	GDP	2.5% Expected

Sources: Business Standard –January 2022

8.2 DEVELOPMENTS OF HEALTH SECTORS:

A healthy nation is wealthy so it is possible through Entrepreneurship, Innovation, Collaboration and health care Expenditure to drive health care transformation, collaboration across the health industry, world, and government to build sustainable health business. “Physical infrastructure in India is divided depending upon the level of care required and it includes Primary care Provided by primary health centres, Secondary care provided at district hospitals and Tertiary care institutions are specialized hospitals like AIIMS and Rural health care consists of Sub-Centres (SCs), Primary Health Centres (PHCs) and Community Health Centres (CHCs)” (Saurabh, July 2021) [15]. The skill health force is very important for improving health outcomes, Healthcare Sector Skill Council (HSSC) institution will provide adequate skills for healthcare sectors and beneficial for the economic growth.

Make in India, health care startups can provide opportunities, affordability and accessible health care to society. Meditech startups are creating novel healthcare technology for India and the global market. Covid19 has created a positive impact on innovation in healthcare; according to the World health organization Karnataka Government has created the Apthamitra helpline to provide health information to the people in terms of Hospital Beds, doctors at call and other health requirements to the citizen. The government of India has initiated several schemes and policies and Niti Aayog to build sustainable healthcare.

There are different schemes such as reproduction-linked incentive (PIL Schemes), Make-In –India, Startup India, National Digital Health Mission and Five parks to manufacture low-cost medical devices in association with National Medical Devices Promotion Council along with DRDO and Five state governments to create a medical device ecosystem. The indigenous production and services of medical devices, drugs, insurance, research institutions and diagnostics can transform healthcare into affordable and available in both rural and urban populations.

8.3 HEALTH INFRASTRUCTURE:

The good health and well-being of all sections of the society to increase productivity along with physical infrastructure are very crucial. Health infrastructure includes doctors, nurses, hospitals, Para-medical professionals, beds, types of equipment and pharmaceuticals. it is broadly classified, “Primary Health Care provides primary health centres, Secondary care provided at district hospitals and Tertiary care institutions provided by specialized hospitals like AIIMS New Delhi; Post Graduate Institute, Chandigarh; Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry; National Institute of Mental Health and Neuro Sciences, Bangalore and All India Institute of Hygiene and Public Health, Kolkata. Primary health infrastructure in rural areas consists of a Three-tier system, Sub centres (SCs), Primary Health Centres (PHCs), Community Health Centres (CHCs) including education. The government transformed the health centres into Health Wellness Centres (HWCs).” in all the city Tier 1, Tier2, and Tier3 and Rural area.

Table 3: Health Infrastructure 2021List of No of Doctors and Medical colleges

Doctors	No
No of Doctors	1.27 Million
No of Medical Colleges	558

Source: India Brand Equity Foundation

From the table 3, it stated that the total number of doctors is about 1.27 million and 558 medical colleges rendering health care services according to the report of the Indian Brand Equity Foundation that shows the healthy growth of the health infrastructure.

The government of India launched an Ayushman Bharat Health Infrastructure Mission Scheme to strengthen the healthcare infrastructure from village to block and national level and it will create health employment for doctors, paramedics, labs, pharmacies and it will satisfy the requirements in public health infrastructure both in the urban and rural area and health investment in health wellness centres and urban health wellness centres. The community and Non-Profit organizations are one of the important aspects in providing well access to health care services and involved in the primary healthcare system and spreading health awareness to reduce the gap between rural-urban areas in utilizing health care facilities.

Table 4: Numbers of Hospital, ICU beds and Allopathic Doctors

Particulars	Numbers
Population	1100
Total hospital beds	1899228
Private Sectors	1185242
Public Sectors	713986
ICU Beds in Private Sectors	59262
ICU Beds in Public Sectors	35699
No Allopathic doctors	1154686

Source: The Print 22nd July 2021

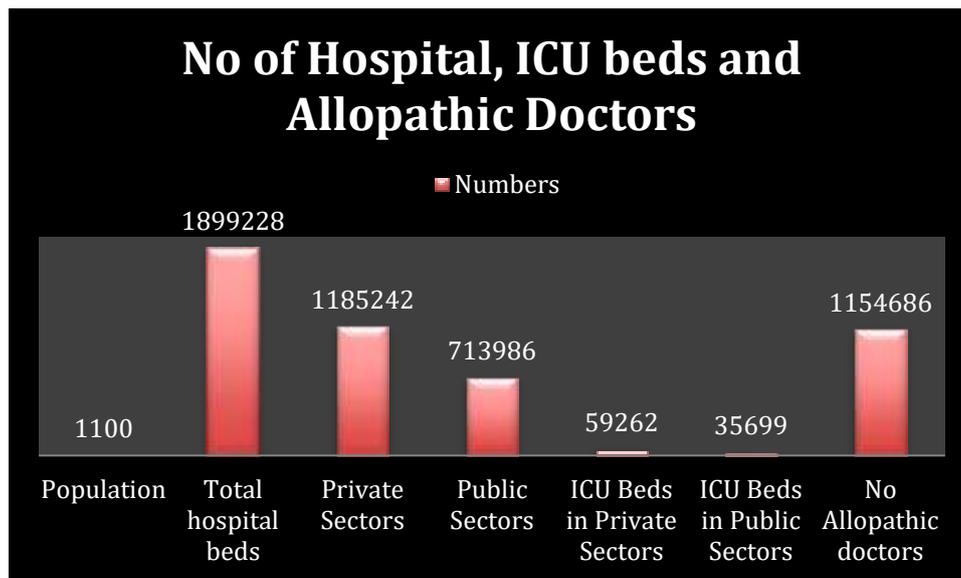


Fig. 5: Numbers of Hospital, ICU beds and Allopathic Doctors

This table 4 and graph (Figure 5) show the several government health schemes satisfying the need for hospital beds and ICU beds for both public and private sectors. For every 1100 population 1899228 hospital beds including ICU beds are available for patients.

8.4 SEVERAL HEALTHCARE SCHEMES BY THE GOVERNMENT OF INDIA:

The government policy plays important role in providing healthcare at an affordable for a large section of the society, Government of India committed to Universal Health Coverage (UHC) through the new National Health Policy (NHP) to meet the Sustainable Development Goal-3 (Lahariya, 2020) [16] some of the schemes include:

(1) The Ayushman Bharat programme (PMJAY), Rashtriya Swasthya Bima Yojana (RSBY), Pradhan Mantri Swasthya Suraksha Yojana (PMSSY), Senior Citizen Health Insurance Scheme. “The 71st round

of National Sample Survey organization reveals that staggering 85.9 Percent of the rural Indian households do not have access to any Health care insurance” Manjula Wadhwa (October 2021).

(2) To increase Indian export the government of India introduced a scheme called Aatmanirbhar Swasth Bharat Yojana at airports for Smooth movement of pharmaceuticals through India and other parts of the world by air.

(3) To promote and transform the health care products and services policies like The Janai Suraksha Yojana focus upon the women to utilities in government health facilities, Jan Aushadhi for setting up pharmacies and quality generic drugs and surgical products in tire city and Rural areas (Reddy, K. S., et al. (2011)” [17]. The Ayushman Bharat Programmes as the two elements: (1) Establishing the Health and Wellness Centres (HWCs) and (2) Pradhan Mantri Jan Arogya Yojana.

(4) To promote good health developing health workforce like doctors, nurses, allied health professionals, lab technicians, X-ray technicians, phlebotomists through healthcare institutions towards the progressive assurance for quality health and lowering the cost of the health care delivery to attract the foreigners to provide quality health care in the form of surgeries, liver transplants, dental, Cardiology to promote Medical Tourism and Economic growth.

8.5 THE NATIONAL HEALTH POLICY (2017):

The Last National Health Policy was framed in 2002 and The National Health Policy 2017 comes after a gap of 15 years to address the changing socio-economic, technological and epidemiological landscape for shaping the health system.

Table 5: Highlights of the National Health Policy-2017 (Pandey, May 2017)

AIM	IMPACT
Reaching the Health care	To all, particularly underserved and underprivileged
Health care orientation	For all ages and Universal access to good-quality health care services without any financial hardship
Broad principles of the policy	Professionalism, improving quality, lower-cost, equity, affordability, patient-centred and accountability
Collaboration	With the private sector to achieve national health goals
Public health expenditure	Government plans to increase public health spending to 2.5% of GDP by 2025
Policy Approach	Progressively incremental assurance Approach through Health and Wellness Centres-availability 2 beds per 1000 population, free drugs, free diagnostics and free emergency and essential healthcare services in all public hospitals
Dimensional integration	AYUSH SYSTEM It includes six systems-Ayurveda, Yoga, Unani, Siddha, Naturopathy and Homeopath
Regulatory	Ensuring the standards and quality healthcare, easing manufacturing of drugs and devices and reforming medical education
Health security and Make in India	For the Production of drugs and devices for public health

8.6 PM-JAY (health assurance scheme):

PM-JAY is the world’s largest health assurance scheme financed by the government. It provides cashless cover Rs 5,00,000 for secondary and tertiary care, cost of the scheme is shared by the Central and State Government to achieve the SDG.



Fig. 6: Details of time period of PM-JAY health assurance scheme

Source: National Health authority website

8.7 TRANSFORMATION OF HEALTHCARE SECTORS IN URBAN AND RURAL AREAS THROUGH GOVERNMENT SCHEMES AND POLICIES:

To make the population of the country healthier and accessible healthcare system, investing in health makes sound economic sense. Union Budget is an important instrument in transforming all the sectors of economics but the health sector has found a prominent in the budget in terms of spending on the health sector to make healthy people, Healthy Nation. the government has made Aatma Nirbhar Bharat Abhiyaan packages namely Production Linked Incentive PLI schemes for promoting Drug Intermediaries, the COVID Suraksha Mission boosting indigenous vaccine testing and development and PM Aatma Nirbhar Swasth Bharat Yojana to strengthen the health ecosystem at every level by setting up of 4 regional National Institutes for Virology, 15 health emergency operation centres, 2 mobile Hospitals and a National Institution for One Health. The government has made concerted efforts to bring AYUSH to make Swasth Bharat through Ayurveda and Yoga, Mission POSHAN 2.0 Abhiyaan for strengthening of Nutritional content and the government proposed healthcare bills namely The National Commission for Allied Healthcare Professionals Bill and National Nursing and Midwifery Commission Bills. According to IBEF Report in Budget 2021 India's public Expenditure on healthcare stood at 1.2% of GDP and the share of health care on GDP is expected to rise 19.7% by 2027. Funding by the government on health care expenditure will help the healthcare for better treatment, infrastructure and to provide world-class medical facilities at affordable, accessibility and terms of quality healthcare in both urban and rural India (Gupta, I., & Ranjan, A. (2019)) [18].

8.8 ROLE OF MSMES/SMES STARTUPS IN THE HEALTHCARE SECTOR:

India needs quality health care by adapting technology, innovation and health entrepreneurs of SMEs startups can create a big impact in the area of electronic medical records, Hospital Information Systems, Medical devices, Billing, payroll and adoption of Artificial Intelligence (AI) or Machine learning, Mobile technology, Internet of Things, robots help doctors in providing quality treatment at an affordable cost. Entrepreneurs are the catalyst for change and economic development by designing digital health products and services like nursing communication systems, telemedicine, a pathology laboratory, covid-19 testing kit, medical insurance, Oxygen concentrators and Oxygen cylinders for enhancing the quality of life of the workforce.

Startup founded by two or three entrepreneurs with an innovative idea and aim for scalable, profitable and wants to provide service to the society. There are about 3225 startups in health tech (Indian Express 4th December 2021), the pandemic has created many opportunities and innovations World Health Organization (2009) [19] for digital wellness health. Machine Learning and Artificial Intelligence AI

have made considerable contributions in the area of diabetes, Ophthalmology, detection of diabetic retinopathy, Glucose monitoring and Ayurvedic medications that will enhance the quality of life of the population. Healthtech can broadly be divided into six sub-sectors in India namely telemedicine, E-pharmacy, fitness and wellness, healthcare IT and analytics, home healthcare and personal health management through the support of technology to fulfill demands and change the health care ecosystem. Indian startups are called unicorns based on the valuation at \$1 billion or above in the field of digitalization supply chains B2B. Technology like Artificial intelligence (AI), Augmented Reality (AR), Virtual reality (VR) Robotics, 3D Printing used by researchers and Doctors [20] are used to an accurate understanding of patient symptoms. Insurance tech is used in the health care sector to empower the Patients and create the requirement for locally, employment opportunities and gives a major push to the country's primary market and healthcare sectors. SMEs Startups are very successful in fundraising and also it gives a big boost to the healthcare sectors in creating a healthy ecosystem. Covid-19 has more impact on technology like AI, ML, Big data, 3D application in healthcare sectors to thank in an innovative way to boost the welfare of the society. According to the World Health Organization parameter in the Doctor-Patient ratio in the country is 1:1456 is lower than the parameter 1:1000 ratio, with Technology like AI, ML, 3D and Big data India can reach 6.9:1000 in 2023 as compared to 4.8:1000 in 2017 (Analyticsindiamag. com).

8.9 DIGITAL TECHNOLOGY:

Digital technology can build robust accessible and affordable health care for Indian citizens. The health care sector is one of the growing sectors of the economy and has huge investor demand from both global as well as domestic investors and 100% FDI policy and Atmanirbhar Bharat Abhiyaan, Make in India incentive support. SMEs and MSMEs are important contributors to India's economy and social development. The Digital transformation and E-commerce Services as changed the outlook of a hospital, pharmaceutical manufacturing destination for SMEs and MSMEs health care sectors in improving quality of health care with the support of retail and wholesale trade MSMEs in providing medical devices to both rural and urban areas. SMEs and MSMEs are boosting the economic growth by providing surgical and non-surgical instruments such as syringes, needles, bandages, diagnostic imaging, Dental products, hearing aids, pacemakers, Blood pressure monitors, wheelchairs, telemedicine and other health care sectors products. The table 6 highlights and covers the list of health tech startups in India

Table 6: List of Health tech startups in India

Name of the StartUps	Healthcare products/Service
Niramai Analytix	Cancer screening portable and other health products
Qure.ai	Radiology images, Chest X-rays
HealthifyMe	Fitness, nutrition
PharmEasy	Pharmatles
SigTuple Technologies	Blood Sample, Urine, Retinal image
Niramai	Brest Cancer
Purple Does	Healthcare Data Securities
Euor Health	Teleclinics
Docplexus	Network of Doctors
Artelus	Diabetic, retinopathy screening
Tricug	Insta ECG, Insta Echo
Netmeds	Pharmacy
Plum	Health insurance
Happy Reliable Surgeries	3D model CT/MRI

Source: Analyticsindiamag.com& Medicalstarups.org

Indian Health tech Industry created 40 Million jobs in the health sector and their 3000 new generation Health tech startups and Venture capital funding is \$4.4 billion till 2021 as per the report of New Indian express.

Table 7: Overview of India’s Health tech Industry

Health Tech Startups	3000
VC Investment	4 th Rank
VC Funding (Till2021)	\$4.4 billion
Job created	40 million

Source: The New Indian Express December 2021

Table 8: Indian Health Care Market Size

Year	2017	2020	2021	2027
Percentage	91.1	125.6	125.5	275.5Exception

Sources: Business Standard -19January 2022

There is tremendous growth in the market size of the Indian health care sector. In 2017 it is 91.1% but in 2020 it is increasing to 125.6% due to the usage of digital technology and also FDI policy, various MSMEs and SMEs startups. As per the National Health Accounts and PWC analysis, the Indian Health care market Size is expected growth in 2027 is 275.5% Compound Annual Growth rate (CAGR) is 14%, compared with the 2021 Financial year.

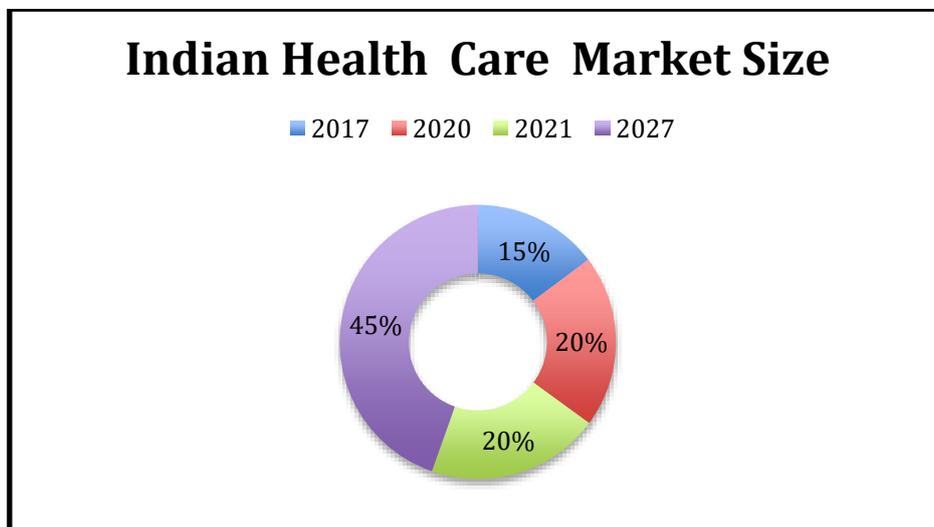


Fig. 7: Indian Health Care Market Size

In the above graph (figure 7) Indian health care market size is showing increasing trend i.e., from 15 per cent to 45 per cent. From the table 9, it reveals that the growing trend of the health care sector is increasing for the last 5 years. The market size of the health care sector is about 140.00 US.\$ billion in 2016, 194.00 US.\$ billion in 2020 and it is expected to grow by 2022 is 372.00 US.\$ billion.

Table 9: Health care Growth trend (US.\$ billion) CAGR16.28 or Market Size

Year	2016	2017	2020	2022 Forecast
US \$ billion	140.00	160.00	194.00	372.00

Source: India Brand Equity Foundation

Table: 10 Government healthcare expenditure to GDP

Year	2016-17	2017-18	2018-19	2019-20	2020-21	2025 Forecast
Percentage	1.4	1.4	1.4	1.5	1.8	2.5

Source: Faqtly.in/data

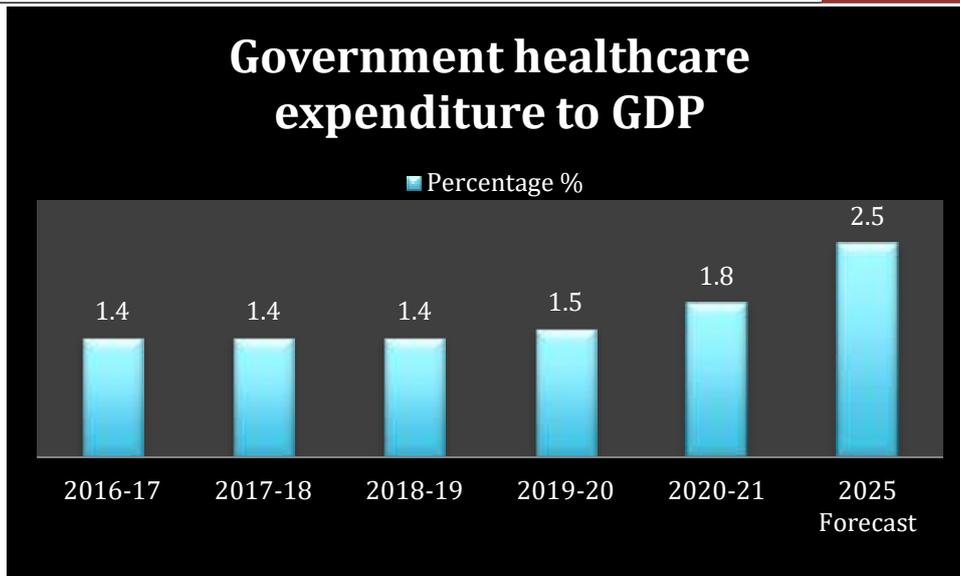


Fig. 8: Govt. healthcare expenditure to GDP

As per the analysis throughout 5 years expenditure of Government healthcare to GDP is varying, that will improve the economic growth of the country.

Table 11: Health Insurance Premium collection

Year	2016	2017	2018	2019	2020	2021
US \$ billion	3.8	4.6	5.9	6.6	7.0	7.9

Source: India Brand Equity Foundation

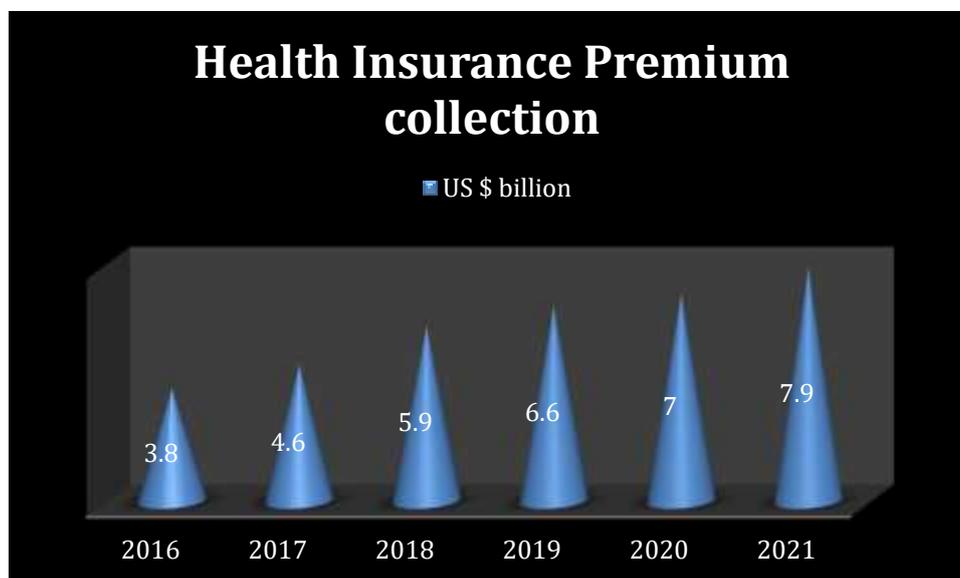


Fig. 9: Year-wise collection of premiums for health insurance

As per the above table 11 and graph, over years, the collection of premiums for health insurance has been increasing in India. This is because of awareness, accessibility and also the affordability of health insurance schemes in both rural and urban areas.

9. ABCD ANALYSIS :

Analysis through advantages, benefits, constraints and disadvantages of the Seven Pillars of inclusive Ecosystem -Transforming Health Care Special reference to MSME & SME sectors gives an idea to the

beneficiaries in a brief. Schemes and programmes offered by the Govt. of India, Niti Ayoga, WHO report and various reports are used for analysis [21 – 24].

9.1 Advantages:

- (1) Government initiative on health care reform to build a strong health care ecosystem and to derriere chronic growths.
- (2) Government initiative social and community insurance has improved the affordability of health care.
- (3) Private sectors Corporate Sectors NGO has addressed the health needs.
- (4) COVID – 19 has created and provided opportunities for investment in health care has transformed the Healthcare ECO system.
- (5) Indian Healthcare growth in terms of Employment, Professional Expertise, startups/unicorns has huge opportunities in investment health care.

9.2 Benefits:

- (1) Health technology initiative like a Mobile app, Electronic health records, telemedicine has improved the health care system and quality of life of the patients.
- (2) IoT, AI, 3D, ML are helpful for doctors in delivering health care services and products to the patient during the emergency and also can extend life expectations.
- (3) Government Public Health Insurance Private Health Insurance is encouraging Rashtriya swastika Bhima Yojana (RSBY) which improves the quality of Health Care Insurance services to the unorganized sector of the society belonging to BPL.
- (4) The main aim of the Ayushman Bharat Yojana is to provide free access to Health Insurance coverage for the lower section of the society. It is very helpful for the people by delivering primary services and also secondary Healthcare services full stop people can benefit from this program through easy access of primary care services from the family doctor and also PMJAY scheme provides secondary health care services for those people who required specialist treatment at a reasonable cost.
- (5) Startups & SMEs, are providing surgical Centres for innovation in new treatments like virtual constructions with a doctor and made advancements in the field of the public health care system.
- (6) Collaboration health care PPT model provides more access quality and reduce cost and contributes equitable and sustainable health care ecosystem. Startups founded by 2 or three Entrepreneurs with an innovative aim for scalable profitability and merits to make difference to humanity.

9.3 Constrains:

- (1) The objectives and benefits of Rashtriya swasthya yojana should be properly communicated to the people.
- (2) More PPP models to be created to reach targeted health care outcomes.
- (3) Health care costs are out of pocket secondary health care services are very high in both rural and urban areas due to a lack of technology upgrading in a public health system.
- (4) Lack of awareness regarding several innovative medical treatments induced society to Health care scariness.
- (5) More accountability from health management is required for providing quality health care to the populations.
- (6) Startups/SMEs have to provide medical products and services at an affordable cost.

9.4 Disadvantages:

- (1) Expenditure on health care services by the central and state need to be increased HD Providing 3 AIS in health care.
- (2) A more collaborative model (to PPP) in Rural and village areas is needed to encourage investment more.
- (3) Government health insurance schemes are to be made compulsory for students in all colleges and universities to accelerate the health ECO system.
- (4) There should be a proper health care policy framework for different medical practices like Allopathy, Homeopathy, Ayurveda.

- (5) Medical education training bio cares medical research to improve the health care and provide ambulance facilities in rural and urban areas.
- (6) IT infrastructure, Telemedicine network links need to be shared among rural populations.

10. RECOMMENDATION :

- (1) Creating awareness about government policies and measures in the health sector in both urban and rural areas.
 - (2) Indian Healthcare ecosystem should adopt the latest technology and they should invest in research and development in the health sector of the country.
 - (3) The government of India need to provide medical devices surgical and non-surgical instruments such as syringes and needles bandages x-ray machines Diagnostic imaging hearing AIDS pacemakers at affordable prices or through subsidies in both rural and urban India.
- It is also important to reduce customs and duty to increase m s me and s m Healthcare sectors which are manufacturing medical products and services that will enhance the economic growth of the country.

11. CONCLUSION :

Health is the most important sector of the Indian economy that will contribute to the GDP of the country. Public health is the major factor that we need to take care of then only there will be a possibility of progress in the country.

So advanced technology, innovations, health infrastructure, health entrepreneurs of SME startups can provide medical devices, medical products and services at a reasonable price that will help for better quality treatment, infrastructure and also to provide world-class medical facilities both in urban and rural India. Many initiatives have been undertaken by the government of India in this sector such as Niti Aayog Aayushman Bharat National Healthcare policies to achieve development in the country.

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REFERENCES :

- [1] Horgan, D., van Kranen, H. J., & Morr , S. A. (2018). Optimising SME potential in modern healthcare systems: Challenges, opportunities and policy recommendations. *Public health genomics*, 21(1-2), 1-17.
[Google Scholar](#) [CrossRef/DOI](#)
- [2] Saha, P., & Mitra, S. (2015). Pattern of Public Health Care and Health System Infrastructure–A Study from Tripura. *SSRN 2783275*, 1(1), 1-21.
[Google Scholar](#) [CrossRef/DOI](#)
- [3] Gouda, R. B., & Ganeshkar, G. (2013). Health infrastructure facilities in Karwar district of Karnataka. *International Journal of Current Research and Review*, 5(3), 69-75.
[Google Scholar](#) [CrossRef/DOI](#)
- [4] Aswal, D. K. (2020). The quality infrastructure of India and its importance for inclusive national growth. *MAPAN*, 35(1), 139-150.
[Google Scholar](#) [CrossRef/DOI](#)
- [5] Lackey, R. T. (1998). Seven pillars of ecosystem management. *Landscape and urban planning*, 40(1-3), 21-30.
[Google Scholar](#) [CrossRef/DOI](#)
- [6] Alfiero, S., Brescia, V., & Bert, F. (2021). Intellectual capital-based performance improvement: a study in healthcare sector. *BMC health services research*, 21(1), 1-15.
[Google Scholar](#) [CrossRef/DOI](#)
- [7] Tripathi, N., & Singh, D. P. (2021). Indian Unicorns and Covid 19: An Assessment and Prospects. *ARTHAVAAN*, 4(1), 55-66.
[Google Scholar](#) [CrossRef/DOI](#)

- [8] Wirtz, J., Lin, C., & Das, G. (2022). Cost-Effective Healthcare Developments and Research Opportunities in China, India and Singapore. *Journal of Services Marketing*, 1(1) 1-20.
[Google Scholar](#) [CrossRef/DOI](#)
- [9] Sainger, G. (2021). Digital Dimension of Indian Healthcare Sector: A Review. *Annals of the Romanian Society for Cell Biology*, 25(3), 1523-1528.
[Google Scholar](#) [CrossRef/DOI](#)
- [10] RBI Steps up support for healthcare, MSME and financial services sectors, www.indiaglobalbusiness.com, May 2021.
[Google Scholar](#) [CrossRef/DOI](#)
- [11] Mistry, L. (2021). India's healthcare sector transformation in the post COVID-19 era. *KPMG Mantra*, 1(1) 1-4.
[Google Scholar](#) [CrossRef/DOI](#)
- [12] NITI Ayog Report (2021). Government of India.
[Google Scholar](#) [CrossRef/DOI](#)
- [13] Growth of Healthcare Industry in India (2021) - Infographic (ibef.org)
[Google Scholar](#) [CrossRef/DOI](#)
- [14] "How Technology Is Changing Health Care in India" (2020).
<https://knowledge.wharton.upenn.edu>. Retrieved on 10/01/2022.
- [15] Saurabh, S. (2021). Augmenting Rural Healthcare Infrastructure. *Kurukshetra*, 1(1), 43-47.
[Google Scholar](#) [CrossRef/DOI](#)
- [16] Lahariya, C. (2020). Skill Development and Healthcare. *Kurukshetra-A journal on Rural Development*, 1(1), 45-50.
[Google Scholar](#) [CrossRef/DOI](#)
- [17] Reddy, K. S., Patel, V., Jha, P., Paul, V. K., Kumar, A. S., Dandona, L., & Lancet India Group for Universal Healthcare. (2011). Towards achievement of universal health care in India by 2020: a call to action. *The Lancet*, 377(9767), 760-768.
[Google Scholar](#) [CrossRef/DOI](#)
- [18] Gupta, I., & Ranjan, A. (2019). Public expenditure on Non-Communicable Diseases & Injuries in India: A budget-based analysis. *PloS one*, 14(9), 1-20.
[Google Scholar](#) [CrossRef/DOI](#)
- [19] World Health Organization. (2009). *Practical guidance for scaling up health service innovations*. World Health Organization. 1(1), 22-45.
[Google Scholar](#) [CrossRef/DOI](#)
- [20] Chakraborty, S., & Aithal, P. S. (2022). A Simulated 3D Printer in CoppeliaSim. *International Journal of Applied Engineering and Management Letters (IJAEML)*, 6(1), 22-32.
[Google Scholar](#) [CrossRef/DOI](#)
- [21] Aithal, P. S. (2017). ABCD Analysis as Research Methodology in Company Case Studies. *International Journal of Management, Technology, and Social Sciences (IJMTS)*, 2(2), 40-54.
[Google Scholar](#) [CrossRef/DOI](#)
- [22] Aithal, A., & Aithal, P. S. (2017). ABCD analysis of task shifting—an optimum alternative solution to professional healthcare personnel shortage. *International Journal of Health Sciences and Pharmacy (IJHSP)*, 1(2), 36-51.
[Google Scholar](#) [CrossRef/DOI](#)
- [23] Aithal, P. S., Shailashree V. T, S., & Kumar, P. M. (2016). Analysis of ABC Model of Annual Research Productivity using ABCD Framework. *International Journal of Current Research and Modern Education (IJCRME)*, 1(1), 846-858.
[Google Scholar](#) [CrossRef/DOI](#)

- [24] Shenoy, V., & Aithal, P. S. (2017). Quantitative ABCD Analysis of IEDRA Model of Placement Determination. *International Journal of Case Studies in Business, IT and Education (IJCSBE)*, 1(2), 103-113.

[Google Scholar](#)

[CrossRef/DOI](#)
