



INDIA'S HEALTHCARE GCCs: PIONEERING GLOBAL INNOVATION IN HEALTHCARE





Shakthi M Nagappan

Chief Executive Officer & Director - Lifesciences and Pharma
Telangana Life Sciences Foundation
Government of Telangana

Telangana has emerged as a global hotspot where the future of Healthcare is being shaped every day. From Pharmaceutical manufacturing and R&D to Global Capability Centers (GCCs) driving digital transformation, our ecosystem spans the entire Life Sciences value chain.

We are proud to have attracted a significant number of global leaders across Pharma, Medtech, Health Insurance, and Care Delivery — companies that are choosing Hyderabad not merely as a base of operations, but as a hub for global innovation. These investments stand as a testament to the business friendly policies of the Government, deep domain expertise, rich digital talent, progressive policies, and world-class infrastructure.

As healthcare becomes increasingly tech-enabled, patient-centric, and data-driven, Telangana is not merely keeping pace — we are actively leading the next wave of global innovation in Lifesciences and Healthcare.



Karthik Padmanabhan

Managing Partner
Zinnov

A few years ago, if you walked into most Healthcare GCCs in India, the conversations would be around process efficiency, compliance, and cost optimization. Today, those same centers are discussing AI-led diagnostics, digital twins for clinical trials, and co-innovation with global R&D teams.

This isn't a surface-level transformation. It's a structural shift — one that has redefined the role India plays in global Healthcare. With a USD 638 Bn Healthcare market projected by 2025 and over 3 Mn skilled tech professionals, India is building Healthcare solutions that impact access, affordability, and outcomes worldwide.

Healthcare GCCs in India are leading work in clinical decision support, drug discovery, and personalized care. Cities like Hyderabad are becoming hubs for Healthcare and Life Sciences, backed by strong academic, start-up, and policy ecosystems.

But the biggest shift is in mindset. Indian GCCs are no longer execution arms, they're co-innovation partners. They're solving for interoperability, data security, and predictive care by working across borders and functions.

The path forward is clear: digitize faster, design for equity, and embed intelligence into every layer of care. India's Healthcare GCCs aren't just evolving with the industry — they're helping shape what Healthcare will look like next.

TABLE OF CONTENTS

01	Executive Summary	05
02	Introduction	06
	2.1 Overview of Global Capability Centers (GCCs)	
	2.2 The Indian GCC Landscape	
03	Healthcare GCCs in India	07
	3.1. Evolution and Growth	
	3.2 Five Key Segments in Healthcare GCCs	
04	Telangana: The Emerging Healthcare Capital of India	09
	4.1. Key Highlights	
	4.2. Robust Infrastructure and Talent Availability	
05	Key Levers of Growth in Healthcare GCCs	11
	5.1 Talent	
	5.2 Technology	
	5.3 Innovation	
	5.4 Collaboration	
06	The Connected Healthcare Ecosystem	20
	6.1. Key Components of the Ecosystem	
07	The Future of Healthcare GCCs in India	22
08	Conclusion	23
09	About AMCHAM India	24
10	About Zinnov	26

01 EXECUTIVE SUMMARY

Rapid Growth and Transformation: India's Healthcare Global Capability Centers (GCCs) are evolving from support roles to innovation hubs, driving the country's Healthcare market growth from USD 110 Bn in 2016 to a projected USD 638 Bn by 2025.

Technology-driven Innovation: GCCs are at the forefront of adopting AI and ML, with involvement in these technologies rising from 65% in 2019 to 86% by 2024, revolutionizing areas such as Clinical Decision Support, Advanced Diagnostics, and Drug Discovery.

Talent as a Key Driver: India's pool of over 3 Mn tech professionals is spearheading innovation in Healthcare GCCs, focusing on critical areas like access, affordability, experience, and outcomes, with companies like Medtronic, Providence, Abbott, Cardinal Health, United Health Group and Carelon showcasing rapid growth and diversification of talent.

Collaborative Ecosystem: The success of Healthcare GCCs is amplified by robust collaborations among start-ups, academia, government bodies, and industry players, fostering a "Connected Healthcare" ecosystem that addresses both local and global Healthcare challenges.

Telangana as an Emerging Hub: Hyderabad is positioning itself as the Healthcare and Life Sciences hub of Asia, with 11% of India's total GCC population and 40% of the country's pharmaceutical production, supported by robust infrastructure like Genome Valley and Medical Devices Park.

Future Growth and Global Impact: The next wave of growth in Healthcare GCCs is expected to be driven by AI, ML, and wearable technologies, with Indian GCCs poised to lead global digital transformation efforts, enhance patient empowerment, and foster data-driven decision-making in Healthcare.

02 Introduction

The global Healthcare industry is undergoing a profound transformation, driven by technological advancements and changing patient needs. This shift is not just altering how Healthcare is delivered; it's reshaping the entire ecosystem of medical research, diagnosis, and treatment.

India, with its unique combination of medical expertise, technological capabilities, and vast talent pool, has positioned itself as a key player in this evolving landscape. The country is rapidly transforming into a hub of Healthcare innovation. At the forefront of this transition are Global Capability Centers (GCCs). These centers have evolved significantly from their initial role as support units, now serving as crucial drivers of innovation in the Healthcare sector*.

2.1 Overview of Global Capability Centers (GCCs)

GCCs, also known as Global In-house Centers (GICs), are offshore units established by multinational companies to deliver a range of services, including IT support, Business Process Management, and increasingly, core functions such as Research & Development. These centers have become integral to global business operations, offering cost efficiencies, access to skilled talent, and round-the-clock service capabilities.

2.2 The Indian GCC Landscape

Snapshot of the Global Capability Center (GCC) Ecosystem in India

1700+

Total Number of GCCs (FY2024)

2975+

Total Number of GCC Units (FY2024)

~4.6%

CAGR of Number of GCCs
(FY2019 – FY2024)

1.93 Mn+

Total Installed GCC Talent (FY2024)

82 K+ & Growing

Installed GCC Tier-II &
Tier-III Talent

~6.3%

CAGR of Total Installed GCC
Talent (FY2019 – FY2024)

USD

64.6 Bn

India GCC Revenue (FY2024)

USD

36.4 Bn

India GCC Revenue – ER&D

~9.8%

CAGR of India GCC Revenue
(FY2019 – FY2024)

Source: Zinnov Research and Analysis

* Healthcare sector includes Healthcare Providers, Healthcare Insurance and Claims, Medical Devices, Pharmaceutical Research, and HealthTech

03 Healthcare GCCs in India

3.1 Evolution and Growth

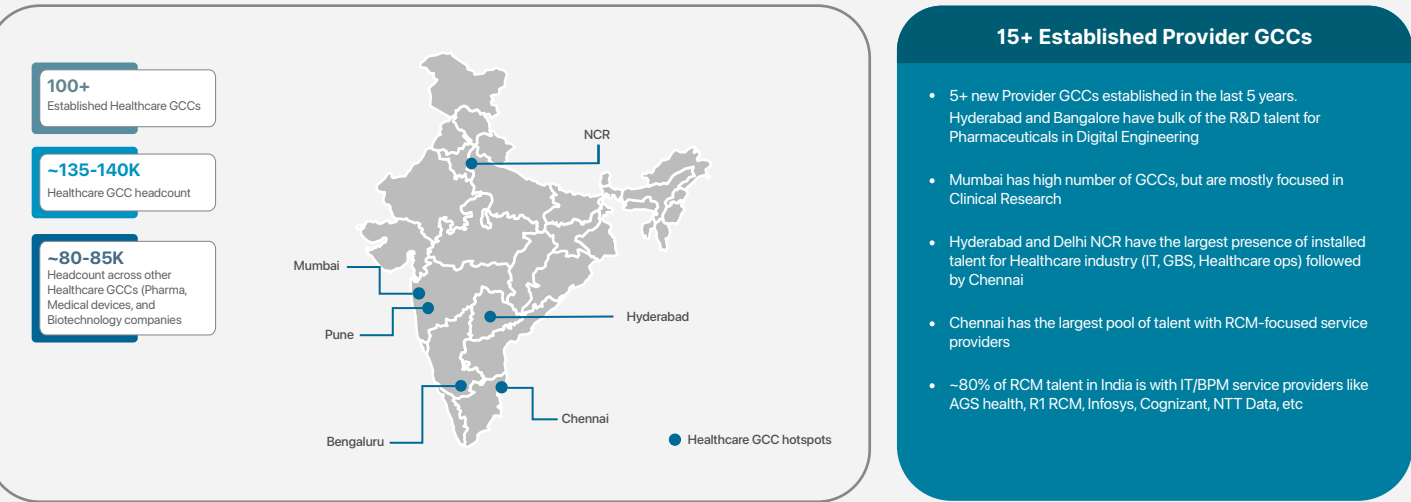
Within this thriving GCC ecosystem, the Healthcare sector has emerged as a significant and rapidly growing segment. The journey of Healthcare GCCs in India began in the early 2000s, marking the start of a transformative era in the country's Healthcare landscape. Over the past two decades, some of the world's leading Healthcare companies have established and expanded their GCC operations in India, recognizing the country's potential as a hub for innovation and digital capabilities.

These companies have made substantial investments in building robust digital infrastructures and fostering an environment that accelerates innovation.

Today, these centers are at the forefront of developing cutting-edge solutions, leveraging advanced technologies such as Artificial Intelligence (AI), Machine Learning (ML), and Data Analytics. Their work spans across various domains of Healthcare, from improving patient care and streamlining operations to revolutionizing Drug Discovery and Medical Research.

India Healthcare GCC

Healthcare GCC industry is one of the largest within India GCC landscape



Top Healthcare Companies (Including GCCs of Global Payers, Providers and RCM Service Providers)

Service Providers

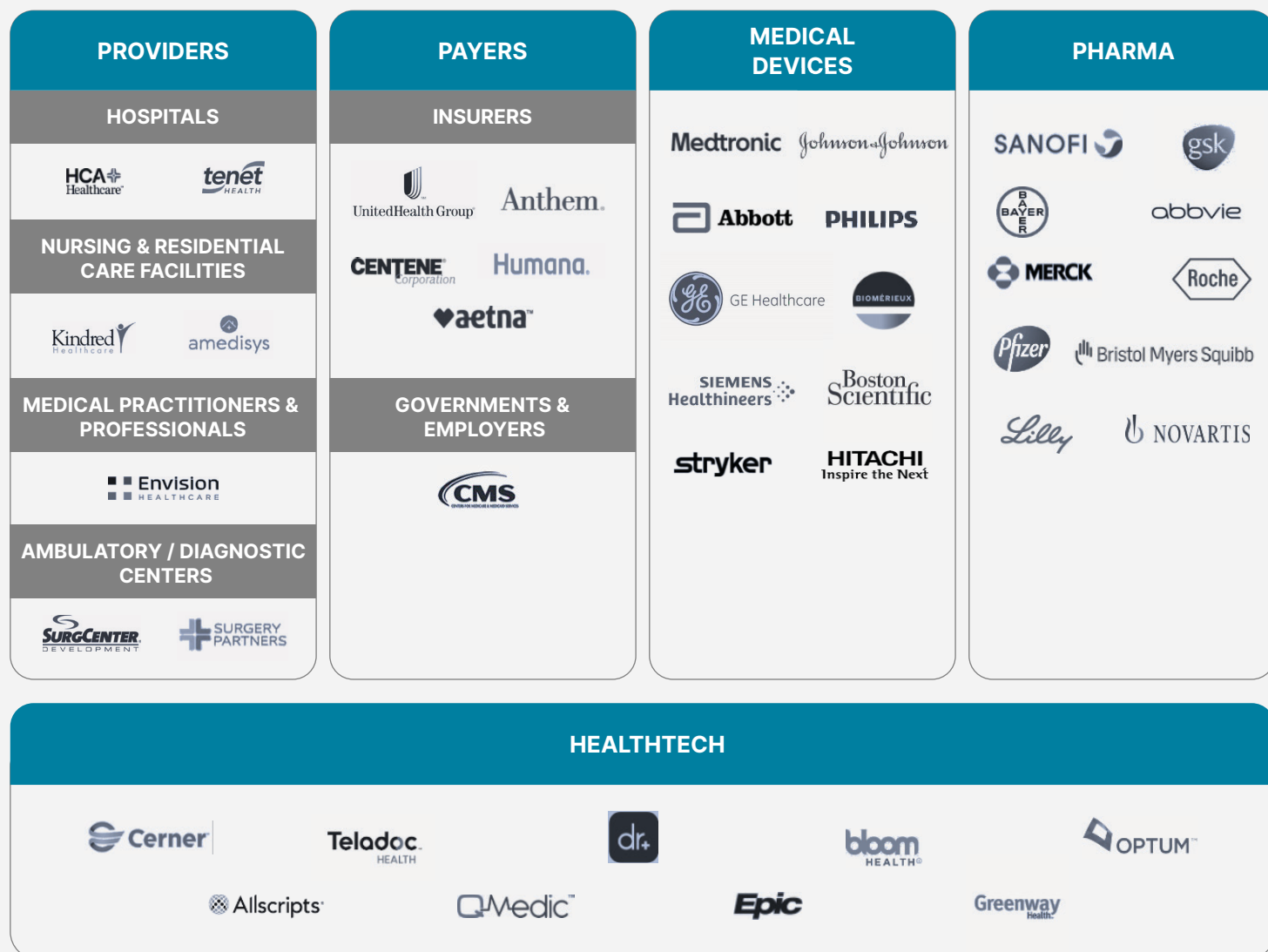
Source: Zinnov Research and Analysis

Logos are indicative and not exhaustive

3.2. Five Key Segments in Healthcare GCCs

As these GCCs have evolved, they have expanded their scope to cover the entire spectrum of Healthcare services and innovation. Specifically, Healthcare GCCs in India now operate across five key areas, each contributing to the transformation of Global Healthcare Delivery:

- **Healthcare Providers:** Enhancing hospitals and clinical services through technological innovations
- **Healthcare Insurance and Claims:** Streamlining Healthcare Payments and improving Financial Claims processes
- **Medical Devices:** Developing new diagnostic and treatment tools to advance patient care
- **Pharmaceutical Research:** Accelerating Drug Discovery and development processes
- **HealthTech:** Creating Technology-driven Healthcare solutions for improved accessibility and efficiency



Source: Zinnov Research and Analysis

These centers combine India's technical expertise with global Healthcare knowledge to develop solutions for both local and global markets. By leveraging advanced technologies like AI and Data Analytics, they're improving patient care, reducing costs, and making Healthcare more accessible.

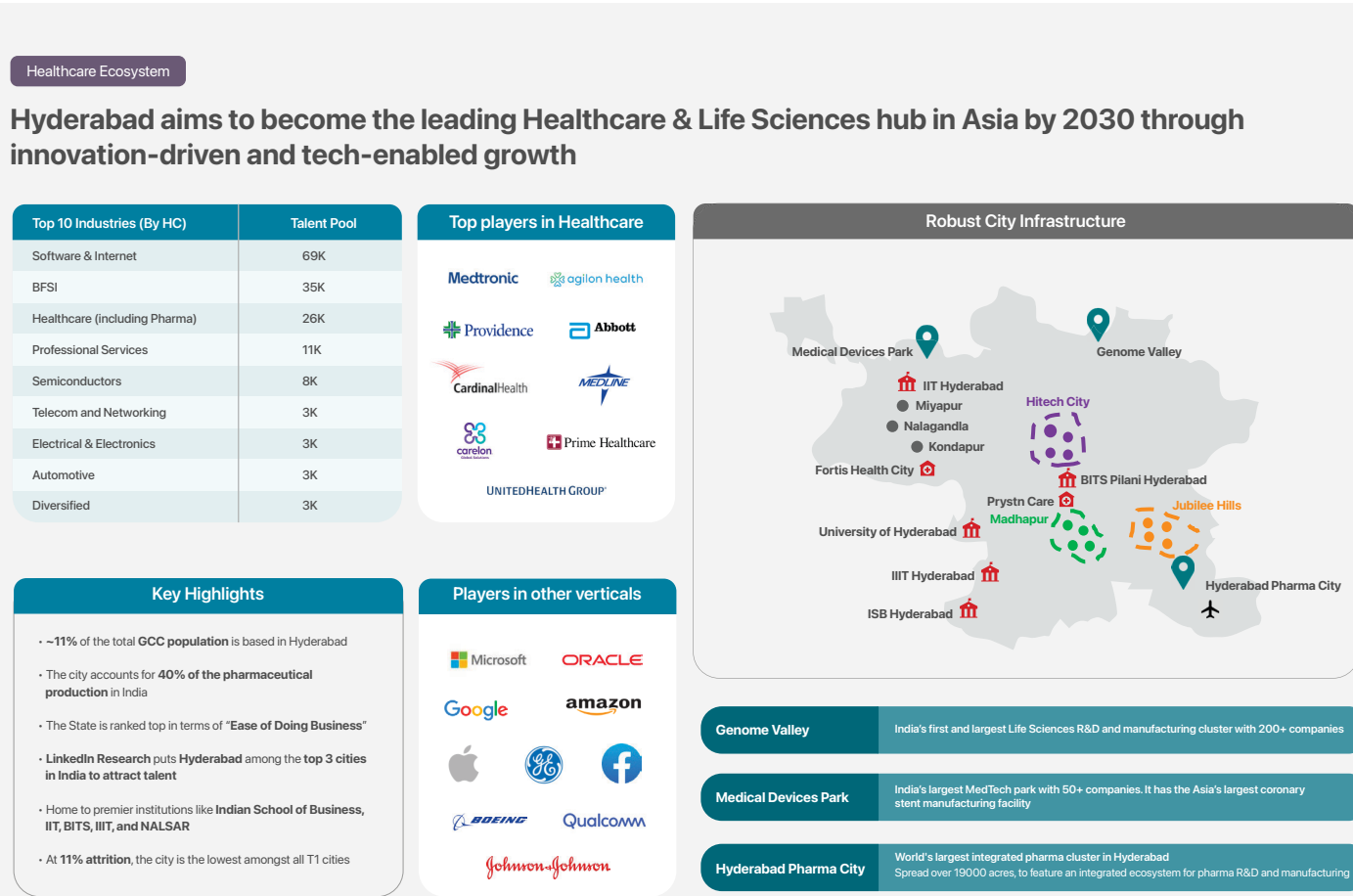
The impact is significant: India's Healthcare market is expected to grow from USD 110 Bn in 2016 to USD 638 Bn by 2025. This growth is supported by increasing investments, with Private Equity and Venture Capital in Healthcare surpassing USD 1 Bn in early 2024 alone.

As Healthcare GCCs in India continue to flourish, their impact is magnified when concentrated in strategic locations. These regional hubs foster innovation through shared resources, talent pools, and collaborative ecosystems.

One such emerging powerhouse in the Healthcare GCC landscape is Telangana, with its capital Hyderabad rapidly becoming the beacon of India's Healthcare revolution.

04 Telangana: The Emerging Healthcare Capital of India

Telangana, particularly its capital city Hyderabad, is rapidly establishing itself as the Healthcare and Life Sciences hub of Asia. The state's strategic focus on innovation-driven and tech-enabled growth is positioning it at the forefront of India's Healthcare revolution.



Source: Zinnov Research and Analysis

4.1. Key Highlights

- 11% of India's total GCC population is based in Hyderabad
- The city accounts for 40% of India's Pharmaceutical production
- Telangana is ranked top in terms of "Ease of Doing Business"
- LinkedIn Research ranks Hyderabad among the top 3 cities in India to attract talent
- At 11% attrition, Hyderabad has the lowest rate among all Tier-I cities

4.2. Robust Infrastructure and Talent Availability

Hyderabad boasts a comprehensive ecosystem that supports Healthcare innovation:

1. **Genome Valley:** India's first and largest Life Sciences R&D and Manufacturing cluster, housing over 200 companies.
2. **Medical Devices Park:** India's largest MedTech park with 50+ companies, featuring Asia's largest Coronary Stent Manufacturing facility.
3. **Hyderabad Pharma City:** The world's largest Integrated Pharma Cluster, spread over 19,000 acres, designed to foster an integrated ecosystem for Pharma R&D and Manufacturing.
4. **Educational Institutions:** Hyderabad is home to premier institutions like the Indian School of Business (**ISB**), Indian Institute of Technology (**IIT**), Birla Institute of Technology and Science (**BITS**), The International Institute of Information Technology (**IIIT**), and National Academy of Legal Studies and Research (**NALSAR**), supplying a steady stream of skilled talent.

Telangana has solidified its reputation as a leading Healthcare GCC hotspot, driven by its robust talent ecosystem.

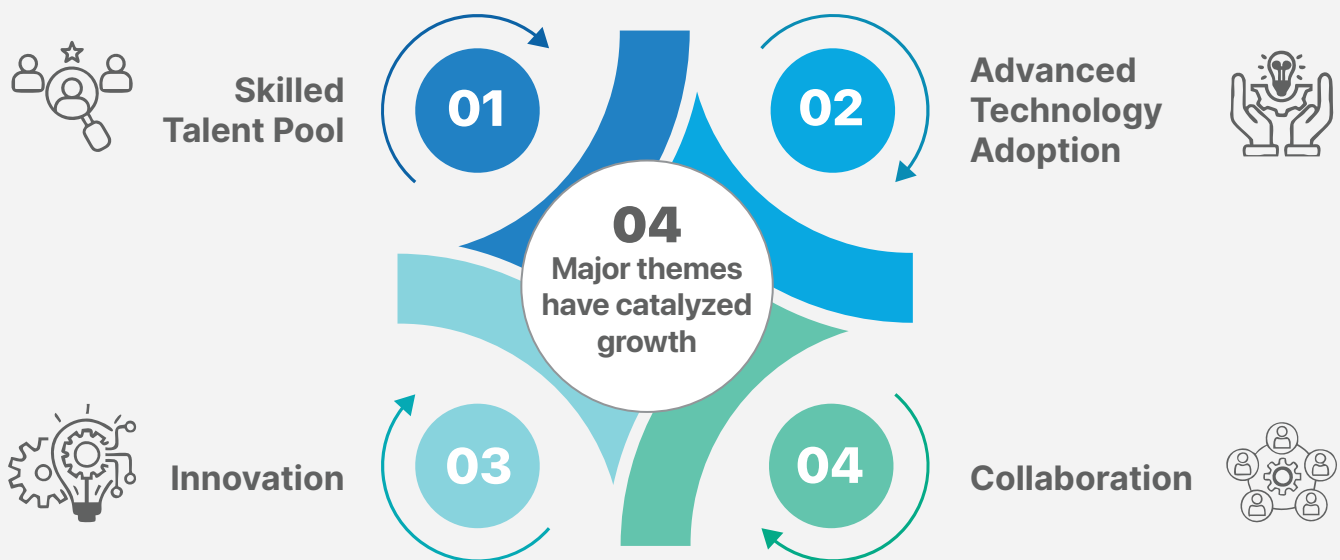
Hyderabad, housing 1.87 Mn experienced professionals, is now a magnet for global enterprises, offering a deep pool of white-collar talent, cutting-edge infrastructure, and a progressive business environment. The state's academic output, producing 1 lakh engineers annually, and its strong talent retention make it an ideal destination for Healthcare and tech-driven innovation.

This comprehensive infrastructure, talent pool, and ecosystem has attracted major global Healthcare companies to Hyderabad, including big players like Medtronic, Providence, Abbott, Cardinal Health, Caelon, and United Health Group, further solidifying Telangana's position as a Healthcare innovation hub.

5. Key Levers of Growth in Healthcare GCCs

The rapid rise of Healthcare GCCs across India, exemplified by Telangana's success, is not a coincidence but the result of strategic investments and favorable conditions. Regional hubs like Hyderabad showcase the potential of concentrated growth, while the broader transformation of Healthcare GCCs is driving India's evolution from support centers to innovation powerhouses. This transformation is rooted in factors that have created a fertile ground for healthcare innovation nationwide.

As we delve deeper into the dynamics propelling this growth, four key levers emerge as the primary catalysts for transformation: skilled talent pool, advanced technology adoption, innovation by Indian Healthcare GCCs, and collaboration between start-ups, academia, government, and industry.



Source: Zinnov Research and Analysis

5.1. Talent: Driving Digital Transformation in Healthcare

The Healthcare industry is undergoing a rapid transformation, fueled by technologies like Generative AI. These advancements are unlocking innovative use cases that demand a skilled technology workforce to drive better Healthcare outcomes and reshape the industry.

Technology Focus Areas across Healthcare Value Chain.

1. Innovation & Research Excellence

- Drug Discovery and Development Optimization
- Medical Device Innovation and IoT Integration
- Clinical Trial Efficiency and Data Management
- Genomics and Personalized Medicine Advancement
- Research Collaboration Platforms

2. Operational Intelligence

- Healthcare Delivery Optimization
- Supply Chain Management
- Resource Allocation and Scheduling

- Administrative Automation
- Quality Control and Compliance
- Claims Processing Efficiency

3. Care Delivery & Access

- Telehealth and Virtual Care Solutions
- Care Coordination Platforms
- Remote Patient Monitoring
- Emergency Response Systems
- Rural Healthcare Access
- Preventive Care Programs

4. Data & Analytics

- Clinical Decision Support
- Population Health Management
- Predictive Analytics
- Real-world Evidence
- Healthcare Economics
- Risk Assessment Models

5. Patient & Provider Experience

- Digital Patient Engagement
- Provider Workflow Optimization
- Integrated Health Records
- Patient Education Platforms
- Mental Health Support Systems
- User Experience Design

6. Financial Optimization

- Value-based Care Models
- Payment Processing
- Revenue Cycle Management
- Insurance Claim Optimization
- Price Transparency
- Cost Containment Strategies

7. Security & Compliance

- Data Privacy and Protection
- Regulatory Compliance
- Interoperability Standards
- Identity Management
- Audit Trails And Monitoring

This shift towards technology-driven solutions is fostering a more consumer-centric, wellness-focused approach in Healthcare. As the industry increasingly relies on these advanced technologies, the demand for skilled technology talent continues to grow.

Focus Area	Providers	Payers	Pharma	Medical Devices	HealthTech
Innovation & Research	✓	—	✓✓	✓✓	✓
Operational Intelligence	✓✓	✓✓	✓	✓	✓
Care Delivery & Access	✓✓	✓	—	✓✓	✓
Data & Analytics	✓	✓✓	✓✓	✓✓	✓
Patient & Provider Experience	✓✓	✓	—	✓✓	✓
Financial Optimization	✓	✓✓	—	✓	✓
Security & Compliance	✓	✓✓	✓	✓✓	✓

✓✓ Primary Focus

✓ Secondary Focus

— Minimal Focus

Source: Zinnov Research and Analysis

Essential Tech Skills in Healthcare Innovation

CLOUD COMPUTING

Skills in Cloud Engineering and Architecture are critical for managing data, reducing costs, and ensuring efficient operation.

DATA ANALYTICS

Proficiency in processing, analyzing, and leveraging health data is essential. This includes skills in system design, implementation, support, and data visualization.

UI/UX DESIGN

The need for designing user-friendly systems and applications is paramount, taking into account patient experience and compliance requirements.

MEDICAL CODING AND HEALTH INFORMATICS

Demand for skilled medical coding and health informatics professionals is high, vital for converting medical services into universally accepted codes.

Source: Zinnov Research and Analysis

Case Study: Carelon India GCC

With a massive headcount growth of 18,000+ associates, Carelon Global Solutions India is driving connected care and transforming the global Healthcare ecosystem

Overview



Carelon Global Solutions India is a health services organization providing unparalleled digital solutions and operational support to solve complex Healthcare challenges. Previously known as Legato Health Technologies, the organization specializes in data and digital solutions, information technology, business operations, and Business-Process-as-a-Service (BPaaS). In India, the team drives exceptional associate experience by promoting continuous learning, sustainable practices, and an equitable workspace for diverse talent.

- Industry: Healthcare
- Global Year of Inception: 2017
- Year of Inception in India: 2017
- India GCC Locations: Bengaluru, Hyderabad and Gurugram
- India GCC Headcount: 18,000

Context

With core expertise in business operations, data and digital solutions, IT and BPaaS, we have established a strong foundation and scaffolding covering the complete Healthcare lifecycle and built 3000+ distinct skills across the organization.

Technology

50.6% of our associates come with diverse technology expertise. The leadership team has grown three times in size since inception, with our leaders bringing in depth of knowledge in niche technologies.

6 strategic councils on innovation, digital transformation, and more

10+ COEs and CoPs to enhance niche tech capabilities

Shared Services capability across 5 corporate functions including Finance and HR

Implemented 900+ business ideas by associates

Integrated Career and Skill Architecture - Our AI-powered platform enables associates to map their career and upskill at a pace they are comfortable with. In one year, 15000+ associates have connected to this platform, covering the complete development lifecycle and they have access to over 8000 courses.

Quality Engineering Framework - As one of the fastest growing GCCs, quality is a business priority. We implemented a best-in-class framework, homegrown suite of productivity tools, robust audit platform, and a CoP to build a consistent quality engineering practice. Within a short turnaround, 90% of our applications are already covered by the framework.

Business Resilience - As a global center handling mission critical workflows for the business, we have established a robust risk management framework mapping out key strategic and operational risks and built a framework to mitigate them. This safeguards the business from major unplanned disruptions and implements resilience, continuity, and response capabilities.

Business Operations

45.7% of our associates are part of the BO function the BO leadership has doubled in size since inception driving excellence and maximizing value for our stakeholders.



Inclusive and accessible workspaces



Stringent measures on physical safety



Inclusive POSH policies



40% women associates and 27% leaders



Source: Zinnov Research and Analysis

Case Study – Talent:

GCC Growth story

Healthcare India GCC, within 6 years of inception has scaled to house 72% of its global headcount

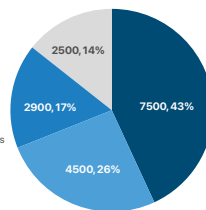
Healthcare GCC

India GCC Setup	2017		
GCC Headcount	18,000+		
Bangalore	Hyderabad	Gurugram	Total
8,500+	8,000	1,500	18,000+

Headcount Split for GCC horizontal functions

Total = 17,400

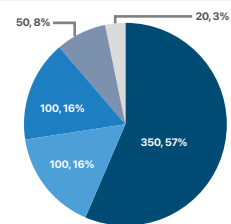
- Business Operations
- Technology - Omnichannel Health Services
- Technology - Health Benefits Technology
- Data, Digital Platforms, AI



Headcount Split for GCC horizontal functions

Total = 620

- IT
- Procurement
- Sales and Marketing
- Finance
- Legal



Rationale for GCC Setup

- The global parent intended to establish wholly owned subsidiaries in low-cost locations India and the Philippines, where they could hire IT and business professionals to replace contractors.
- The parent company intended to have technology, business operations, and corporate teams based at low cost off-shore locations, preferably one site, to allow seamless collaboration and have shared metrics and success outcomes

Setup as an extension of the teams in US, with primary objective to support operations in the US

Expanded footprint in India, hired Directors for leading various functions at the GCC. The key focus area of the Director was to facilitate delivery and talent development

Headcount – 1,000+

The center shifted its focus from delivery to enhancing efficiency, reducing turnaround time, and expanding services. Introduced a comprehensive employee value proposition for cultural alignment.

Headcount – 8,000+

The Automation Center of Excellence (CoE) was established to streamline automation efforts and implement a structured governance framework for its deployment.

Headcount – 12,000

Partnered with consulting partners for benchmarking projects on automation CoE, maximizing partner ecosystem. Introduced an L&D platform to enhance associates' capabilities.

Headcount – 18,000+

2017

2018

2020

2021

2023

*Note: Each vertical function includes the following portfolios:

Business Operations - Health Benefits Commercial Claims Operations, Enrollment & Billing (E&B), GBD Claims, Enterprise Benefit Administration (EBA) and Provider Data Solutions (PDS)

Technology - Omnichannel Health Services: Whole Health Advocacy, Provider Experience Platform, Enterprise Architecture, Peer 1 RX Digital Experience Product Engineering, Enterprise Infrastructure, Cloud enablement

Technology - Health Benefits Technology: Commercial claims operations, Health benefits technology

Data, digital platforms and AI - Enterprise Data Analytics, AI, Digital Platforms

Source: Zinnov Research and Analysis

5.2. Technology: Driving Innovation in Healthcare GCCs

Carelon's growth in India illustrates the increasing importance of technology talent in Healthcare:

The adoption of advanced technologies, particularly Artificial Intelligence (AI) and Machine Learning (ML), is rapidly transforming India's Healthcare sector. GCCs are at the forefront of this change, with AI/ML project involvement rising from 65% in 2019 to 86% by 2024. This surge in technology adoption is reshaping Healthcare Delivery and Patient Care.

Key Digital trends revolutionizing the Healthcare Industry

 Convenience of Telehealth	• The pandemic increased the demand for the limited number of Healthcare Providers • 2,000% rise in video-based telemedicine consultations at Mayo clinic as compared to pre-pandemic levels
 Increasing Transparency in Pharmaceutical Supply Chain	• USD 35 Bn+ losses incurred by pharmaceutical players each year due to failures in transporting and storing products • Blockchain used in Supply Chain Visibility solutions offer real-time insight ensuring transparency in the shipping process
 Accelerated Drug Discovery	• Just 0.1% of the initially tested drug candidates make it to clinical trials • AI platforms can overcome this delay and lower pre-discovery cost by up to 90%
 Rise in Personalization in Healthcare	• 75% of U.S Consumers are seeking Personalized Healthcare experiences • Personalized targeting will shift concern from cure to prevention, reducing costs and improving patient outcomes
 Evolution of 'Health & Wellness' as a category	• Massive increase in number of adults in the US experiencing symptoms of depression -11% in 2019 to 42% in 2020 • Mental health start-up funding witnessed 5.5x increase in 2020
 Emergence of "Collaborative Ecosystem" around fast-growing Healthcare data	• >2000 exabytes Healthcare data generated in 2020 globally which most of goes underutilized • Leveraging the patient's health data which is spread across the Healthcare Ecosystem to provide personalized care

Source: Zinnov Research and Analysis

Key Areas of Technological Impact

1. **Clinical Decision Support:** AI algorithms are enhancing diagnostic accuracy and treatment recommendations.
2. **Advanced Diagnostics:** AI-enabled tools, such as endoscopy systems, are improving early disease detection.
3. **Robotic-assisted Surgery:** Enhancing precision in complex medical procedures, leading to better patient outcomes.
4. **Administrative Automation:** Streamlining operations and optimizing case management.
5. **Blockchain Applications:** Ensuring secure and efficient management of Healthcare data.

Despite the transformative potential, challenges persist in bringing AI from concept to production. Regulatory requirements in Pharmaceutical and clinical settings necessitate extensive testing and validation. Scalability also remains a key hurdle, as AI models must be adaptable to evolving Healthcare needs and technological advancements.

As AI and related technologies mature, their integration across both clinical and non-clinical functions is becoming increasingly seamless. This progression is not only accelerating Healthcare delivery but also significantly improving the quality of patient care.

5.3. Innovation: GCCs Driving Healthcare Transformation

Indian GCCs are driving technological advancements, fostering a thriving ecosystem of Healthcare innovation. This dynamic environment is accelerating the transformation of the Healthcare sector, tackling both local and global challenges with cutting-edge solutions.

India's pool of over 1.9 Mn professionals in GCCs is spearheading innovative projects that are reshaping Global healthcare industry, across the value chain.



Medical Imaging and AI: Developing AI-based tools for surgical planning and deriving insights from imaging, pathology, and genetics data. This improves diagnostic accuracy and patient outcomes.



Molecular Testing and Genomics: Creating end-to-end solutions for genetic analysis, including mobile applications for molecular testing research, enhancing personalized Healthcare.



Advanced Medical Devices: Optimizing MRI RF coils and developing ultrasound systems with cloud connectivity, advancing medical device technology.



Fluorescence Imaging: Innovating hand-held imaging systems and fluorescence-based sensors for biomolecule detection, pushing the boundaries of diagnostic capabilities.



Big Data & Analytics: Leveraging advanced analytics to extract insights from Healthcare data, supporting informed decision-making, and integrating diverse data sources.



Healthcare IT and Cloud Infrastructure: Improving interoperability and data security while supporting scalable Healthcare operations.



Cybersecurity: Implementing robust measures to protect patient data and ensure regulatory compliance, addressing critical data privacy challenges.



AR and Application Development: Enhancing patient engagement through AR applications and developing custom Healthcare solutions to streamline Healthcare delivery.



AI/ML in Drug Discovery: Accelerating pharmaceutical research & development through AI and Machine Learning, potentially revolutionizing Drug Discovery processes.

Source: Zinnov Research and Analysis

These innovations are addressing critical challenges in Healthcare quality, accessibility, and personalization. By leveraging emerging technologies, Indian GCCs are improving diagnostic accuracy, enhancing patient outcomes, and driving the evolution of personalized Healthcare on a global scale. The innovative environment within these GCCs is not only solving current Healthcare problems but also anticipating future needs, positioning India as a key player in shaping the future of global Healthcare.

5.4 Collaboration: Driving Healthcare Innovation through Partnerships

The growth and success of Healthcare GCCs in India are significantly amplified by robust collaborations across various sectors. These partnerships, involving start-ups, academia, government bodies, and industry players, are creating a dynamic ecosystem that fosters innovation, addresses complex Healthcare challenges, and drives the development of cutting-edge solutions.

Start-ups: Catalysts for Personalized Healthcare

Indian Healthcare start-ups are at the forefront of advancing personalized Healthcare through innovations in genomics, diagnostic tools, and patient care management. Their work in Pharmacogenomics, a key component of precision medicine, is revolutionizing how medications are prescribed and administered.

MNC - MNC collaboration

Healthcare companies are partnering with start-up ecosystem to work on an innovative product or solution using emerging technologies



Partnership with Synapsica, an AI-based radiology reporting company, to provide Synapsica's AI enabled PACS (Picture Archiving and Communication System) radiology workflow solution 'Radiolens' across the country



Partnered with Oncophenomics, a medical device manufacturing company, to develop a liquid biopsy focused solution involving micro-fluidics enabled lab-on-a-chip to medical device which will identify circulating tumor cells in blood



Partnered with Medtel, a connected care startup, to develop a remote patient monitoring platform that offers real-time data analytics for Providers and members, helping them improve disease and chronic condition management and overall population health management



Implementation of Project Heartbeat to enable local Healthcare professionals take quick decisions on interventions



Developed a novel 3D analysis and mapping system to diagnose variety of arrhythmias



Viewics provides Healthcare data to surface actionable intelligence and empower data-driven decision-making

Source: Zinnov Research and Analysis

Health and Pharma GCCs in India continue to foster innovation in collaboration with academia through diverse and dynamic partnerships

GCC - Academia Collaboration in the Domain of Health and Pharma

Sr.No	GCC	University	Nature of Collaboration	Focus Areas
1		 IIT Guwahati	Sponsored Infrastructure	The collaboration aims to develop an Advanced Training Program centered on additive manufacturing technologies, with a specific focus on 3D printing for biomedical devices. The collaboration also will drive joint research initiatives to explore innovative applications of 3D printing in developing biomedical devices, including implants, prosthetics, and surgical instruments
2		 IISc	Open Research and Outcome based	The collaborative laboratory will create open-source AI-driven tools to automate the precise segmentation of pathological findings in neuroimaging data, enabling accurate diagnosis of neurological diseases and analysis of their clinical impact on a population level This collaborative laboratory will focus on working closely with neurologists, radiologists, and Siemens Healthineers to seamlessly integrate the developed computational models into routine clinical workflows.
3		 IIT Bengaluru	Educational and Research Grant	IITB and Novo Nordisk GBS will collaborate on a range of initiatives, including research, innovation projects, hackathons, case competitions, guest lectures, educational programs, internships, placements, employee development, branding etc In addition to fostering knowledge exchange between industry and academia, the partnership will offer IIT Bangalore students valuable opportunities to gain real-world experience, enhance their skills, and build connections with leading industry professionals
4		 IIT Madras	Innovation	The collaboration will focus on developing both Active Pharmaceutical Ingredients (APIs) and Finished Dosage Forms (FDFs) for differentiated products, including complex formulations, controlled-release dosage forms, device-combination products, lyophilized injections, powder-fill products, and ready-to-use formulations

Source: Zinnov Research and Analysis

List of collaborations are illustrative

Logos are indicative and not exhaustive

Pharmacogenomics focuses on understanding how genes influence an individual's response to medications. This personalized approach enhances treatment effectiveness while minimizing side effects and is being applied to critical areas such as HIV, cancer, depression, and heart disease.

Indian start-ups are making genetic data more accessible and affordable, enabling significant strides in drug therapy optimization. By collaborating with established Healthcare organizations, they are seamlessly integrating these advanced technologies into mainstream Healthcare.

Despite obstacles such as data security concerns, regulatory compliance, and scalability, these partnerships between start-ups and established players are paving the way for the future of precision medicine and personalized care.

Academia, Government, and Industry Partnerships

The synergy between global Healthcare organizations, academic institutions like IITs, and government initiatives is crucial for driving innovation in the Indian Healthcare GCC landscape.

- Government programs like Ayushman Bharat Digital Mission (ABDM) and Start-up India support Healthcare start-ups and promote the adoption of digital Healthcare solutions.
- Additionally, regional Government policies and initiatives, such as those in Karnataka (Karnataka GCC Policy), Telangana (GCC Policy), Tamil Nadu (Tamil Nadu IT/Start-Up Policy), and Gujarat (IT, ITeS Policy), provide strong infrastructure and incentives for the growth of the Healthcare and tech sectors within GCCs. These schemes facilitate funding, mentoring, and ease of doing business, creating an ideal ecosystem for Healthcare innovation.
- Academic collaborations play a crucial role in bridging the gap between theoretical research and real-world applications, with institutions like IITs and IIMs playing an instrumental role in advancing Healthcare technology and management studies. These partnerships help translate cutting-edge research into actionable solutions while providing hiring opportunities for GCCs, with talent acquisition from top-tier institutions increasingly becoming a strategic focus.
- Industry partnerships allow for real-world testing of new technologies and Healthcare solutions, accelerating their scalability and impact within the Indian Healthcare landscape.

These collaborative efforts ensure that the Healthcare ecosystem in India is primed for growth, innovation, and global recognition.

MNC- MNC collaboration

Healthcare companies are partnering with other MNCs to leverage the best of both worlds...

Use-Cases	Partnership	Key Activities and workloads
Diabetes Care	 	To combine the information Medtronic technology gathers with Watson's ability to examine it and discover new methods that can advance the treatment of diabetes.
Diagnostic Innovations	 	Aster DM Healthcare is partnering with Eurohealth Systems to enhance its facilities across the UAE, KSA, Qatar, and Oman by adopting advanced diagnostic innovations from Roche Diagnostics. This collaboration will consolidate Aster's laboratories into a unified platform utilizing state-of-the-art technology, ensuring optimal results for patients and their physicians.
Population Health Management	 	Siemens Healthineers will offer PHM solutions and services from IBM Watson Health. This will help in value-based care analytics and reporting and patient engagement.
AI/ML	 	Nuance Communications, Inc., a Microsoft Company, and Providence have announced that the organizations are working to accelerate AI innovation at scale, propel in-house solutions development, advance clinical research and spur further collaborations between health systems and Healthcare IT vendors.
Patient Experience	 	Modernizing Medicine and Galderma Laboratories have partnered to enhance patient experiences and outcomes by simplifying the creation of educational materials for OTC treatment regimens. This collaboration will streamline the process for Healthcare providers and enable patients to easily order physician-recommended OTC products online for direct delivery.

Source: Zinnov Research and Analysis

As these four key levers - Talent, Technology, Innovation, and Collaboration - synergize within Healthcare GCCs, they drive the creation of a more interconnected Healthcare landscape. Skilled professionals leverage cutting-edge technologies to innovate, while collaborative partnerships facilitate the integration of these innovations across the Healthcare Value Chain.

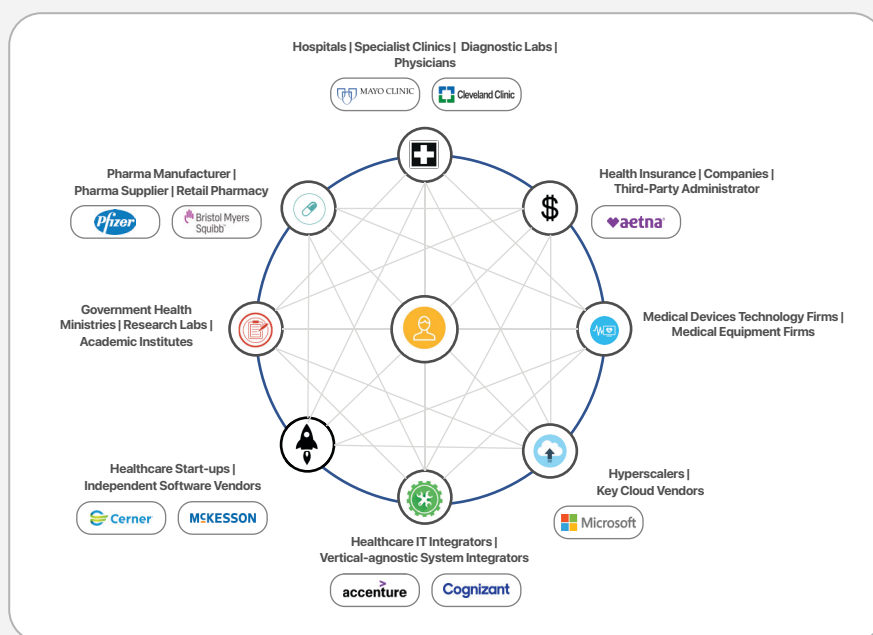
This interplay is shaping a "Connected Healthcare" ecosystem in India, where data, insights, and care delivery converge seamlessly to address the evolving needs of Patients and Providers alike.

6. Connected Healthcare Ecosystem in India

The emergence of a "Connected Healthcare" ecosystem in India is a direct response to the evolving needs of modern patients. This ecosystem integrates a diverse range of stakeholders—Healthcare Providers, Technology Innovators, Academic Institutions, Government Bodies, and Global Healthcare Companies (GCCs)—to enhance Healthcare delivery and outcomes. GCCs play a pivotal role in this interconnected landscape, bringing advanced technologies, expertise, and global best practices that drive innovation and efficiency in India's Healthcare sector. Their partnerships with local governments, academic institutions like IITs, and regional Healthcare hubs like T-Hub, GIFT City and Tech ecosystems in Karnataka, Tamil Nadu, and emerging ecosystems in Tier-II cities contribute to the scalability and sustainability of digital health solutions, ensuring that India remains at the forefront of global Healthcare advancements.

By leveraging the strengths of both local and global players, the connected Healthcare ecosystem creates a robust framework for improving patient care, enhancing operational efficiencies, and fostering new Healthcare innovations. This collaboration between GCCs and domestic stakeholders is essential for building a health-tech environment that caters to the needs of today's digital-first, patient-centric Healthcare landscape.

Rising needs of new-age Patients has led to an emergence of a "Connected Healthcare" ecosystem



Source: Zinnov Research and Analysis

Key Components of the Ecosystem

1. Stakeholders: Healthcare Providers, Pharmaceuticals, Insurance Companies, Government Bodies, and Technology Partners.
2. Data Growth: The Healthcare sector generates 30% of the world's data, necessitating dedicated platforms for effective analysis.
3. Data Platforms: Hyperscalers are leveraging machine learning to create comprehensive Healthcare Data Platforms.
4. Collaborative Networks: Payer-Provider partnerships enable bi-directional data sharing, ensuring timely and appropriate patient care.
5. Enhanced Data Sharing: AI-driven accessibility of Electronic Health Records (EHRs) personalizes care and improves patient experiences.

This connected ecosystem represents a pivotal shift towards an integrated and patient-centric Healthcare system in India. By fostering collaboration across diverse sectors, it not only meets current patient needs but also paves the way for future innovations.

7. The Future of Healthcare GCCs in India

India's Healthcare GCCs stand at a critical juncture – facing both significant challenges and unprecedented opportunities across – technology integration, data management, ecosystem connectivity, and talent acquisition. Scaling AI/ML solutions in clinical settings, securely managing vast amounts of Healthcare data, coordinating multiple stakeholders, and addressing the growing demand for specialized talent are paramount concerns.

In **technology integration and scalability**, GCCs will need to focus on seamlessly transitioning AI/ML solutions from concept to production, particularly in Pharmaceutical and clinical environments. They will face the challenge of navigating rigorous testing and validation processes for regulatory compliance while scaling AI models to meet evolving Healthcare demands. New technology integration across both clinical and non-clinical areas will require innovative approaches to ensure seamless adoption.

Data Management and Security pose another significant challenge, with Healthcare generating 30% of all global data – the sheer volume itself posing significant challenges. Future GCCs will need to develop sophisticated systems to effectively handle this vast volume of information, enabling secure data exchange between Payers and Providers while maintaining privacy and ensuring access to Electronic Health Records (EHRs). Additionally, analysis on this massive data will also enable data-driven decision-making, thus enhancing patient care. Strengthening cybersecurity measures while adhering to compliance standards will be crucial in building trust in Digital Health Systems.

System interoperability represents a fundamental challenge in Healthcare delivery, requiring GCCs to bridge the gap between disparate Healthcare systems and platforms. Implementation of Healthcare data standards like HL7, FHIR, and DICOM is crucial for enabling seamless communication between different vendor platforms and legacy systems. GCCs must develop standardized APIs and robust integration frameworks that allow for consistent data exchange while maintaining data integrity and security. This standardization is essential for creating a unified Healthcare ecosystem where information flows seamlessly between Providers, Payers, and other stakeholders.

Creating a truly connected Healthcare ecosystem will require GCCs to coordinate between diverse stakeholders—Providers, Pharmaceutical Companies, Insurers, and Technology Partners. They will need to develop robust platforms to analyse and utilize Healthcare data effectively, ensuring interoperability between varied systems while maintaining consistent quality across the interconnected ecosystem.

To address these challenges, India's Healthcare GCCs are well-positioned to leverage their unique strengths in the coming years. Enhanced collaboration between start-ups, academia, and industry, building on government initiatives like the **Ayushman Bharat Digital Mission**, will pave the way for innovative approaches. The focused development of scalable technology solutions, particularly in AI/ML and Cloud-based platforms, will accelerate progress in overcoming integration and scalability hurdles. Additionally, strategic talent development through partnerships with premier institutions and the establishment of specialized training programs will nurture the next generation of Healthcare innovators. This will be crucial in addressing the growing demand for specialized skills in emerging technologies like AI/ML and Data Analytics.

The immediate future demands an acceleration of Digital Transformation initiatives and a strengthening of data-driven decision-making. However, the long-term vision extends beyond technological advancement to encompass three crucial dimensions: Preventative Care, Sustainable Innovation, and Equitable Access.

- a. **In preventative care**, GCCs will drive a paradigm shift from traditional "sick care" to proactive health management. By integrating wearable technologies with AI-driven Predictive Analytics, they will enable early detection of health issues and develop personalized health insights and intervention strategies.
- b. **Sustainability** will become another key focus area as environmental concerns grow. GCCs will pioneer sustainable Healthcare solutions through energy-efficient infrastructure, sustainable waste management systems, and the development of green technologies. The digitization of processes will play a crucial role in reducing Healthcare's environmental footprint but also maximizing efficiency while minimizing resource consumption.
- c. Perhaps most crucially, GCCs will address the pressing issue of **Healthcare Equity**. Through the creation of scalable, cost-effective technological solutions and support for innovative business models, they will enhance Healthcare accessibility across diverse socioeconomic strata. The development of tiered care systems that balance advanced technology with affordability will open new avenues for inclusive Healthcare delivery.

Conclusion

India's Healthcare GCCs stand at the forefront of global Healthcare transformation. Their evolution from support centers to innovation hubs has been driven by deep technology expertise, particularly in AI/ML and Data Analytics, combined with comprehensive Healthcare domain knowledge. The robust ecosystem of start-ups, academia, and industry partnerships, especially in emerging hubs like Telangana, has accelerated this transformation.

About AMCHAM India (The American Chamber of Commerce in India):

AMCHAM India is a member of the U.S. Chamber of Commerce in Washington DC and the AMCHAM's of Asia Pacific. Established in 1992, AMCHAM has over 400 U.S. companies as members and plays a pivotal role in fostering strong ties between the U.S. and India. The incumbent U.S. Ambassador to India is the Honorary President of AMCHAM. AMCHAM enjoys a very close relationship with the U.S. Embassy and complete support in fulfilling its objectives.

Country Heads of leading U.S. companies constitute the elected National Executive Board. The Chamber's mission is to assist member companies to succeed in India through advocacy, information, networking and business support services. Headquartered in New Delhi, AMCHAM extends its influence through regional chapters in Bengaluru, Chennai, Hyderabad, Kolkata and Mumbai.

About AMCHAM India's Healthcare Summit:

The First Healthcare Conference was held on September 21, 2012, at the Trident, Hyderabad. Our Healthcare Conferences have had an overarching theme with the underlying theme of Awareness, Accessibility, Availability and Affordability. This year marked the 12th edition of the Healthcare Conference with the theme: Shaping the Future of Healthcare-Touching on Healthcare Technology; Preventive Healthcare & Well-Being; Future Proofing Healthcare: Equity & Sustainability and the last the Collaboration between Start-ups and Healthcare Industry.

About Zinnov

Founded in 2002, Zinnov is a global management and strategy consulting firm, with presence in New York, Santa Clara, Houston, Seattle, Bangalore, Gurgaon, Pune, Hyderabad, and Paris. Over the past 21 years, Zinnov has successfully consulted with over 250+ Fortune 500 enterprises to develop actionable insights to help them accelerate their technology journeys to create value – across dimensions of revenue, transformation, and optimization. With core expertise in Digital Engineering Talent, Digital Transformation, Innovation, and Outsourcing Advisory, Zinnov assists clients by:

- Enabling global companies to develop and optimize a global engineering talent footprint through center setups and accelerators - in an as-a-service model, as well as optimizing their global portfolios, to achieve higher R&D efficiencies, innovation, and productivity.
- Advising global PE firms in asset shortlisting and target evaluation, commercial due diligence, and value creation.
- Growing revenue for companies' products and services in newer markets through account intelligence, market entry, and market expansion advisory.
- Helping global companies outline and drive their open innovation programs, design, and operate accelerator programs, and enable collaboration with start-ups across specific use cases and predefined outcomes.
- Structuring and implementing Digital Transformation levers enabled by technologies like AI/ML, Intelligent Automation, Cloud, IOT, etc.

With their team of experienced consultants, subject matter experts, and research professionals, Zinnov serves clients from across multiple industry verticals including Enterprise Software, BFSI, Healthcare, Automotive, Retail, and Telecom in the US, Europe, Japan, and India. For more information, visit <http://www.zinnov.com>.

Authors



Nitika Goel

Chief Marketing & Strategy Officer
Zinnov



Adnan Furniturewalla

Associate Director,
Marketing and Communications,
Zinnov



Sachit Bhat

Lead,
Marketing and Communications,
Zinnov



Zoha Shariff

Senior Associate,
Marketing and Communications,
Zinnov

