



# Healthcare Market Landscape in India

October 2022



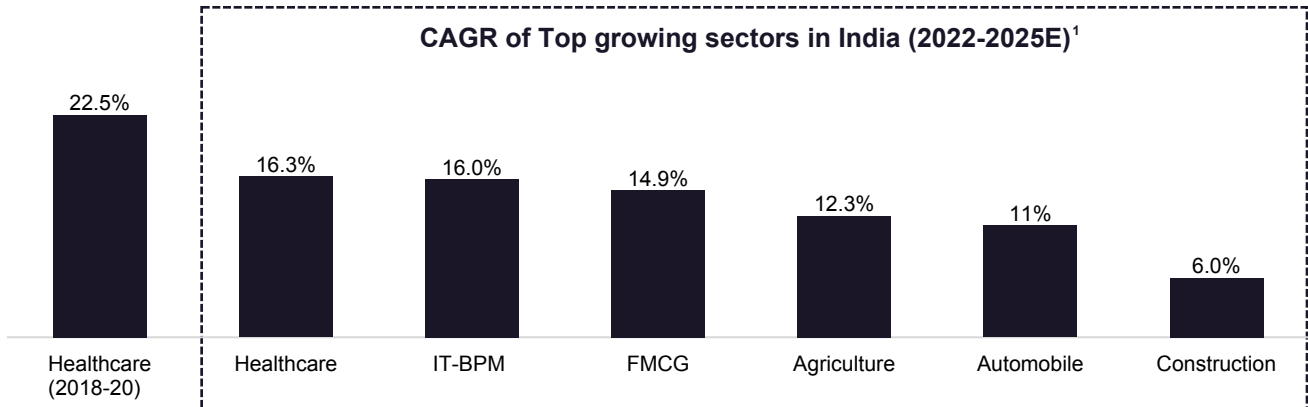
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## 1. Overview of the Healthcare Market in India

The healthcare sector is one of the largest sectors in terms of employment and revenue, which is expected to reach USD 379 Bn by the end of 2022. Due to the expanding service, coverage, and rising spending by both public and private participants, the market is expanding at a phenomenal rate. Rising income, greater health awareness, increased precedence of lifestyle diseases, and higher insurance penetration are the key elements to growth.

According to the NITI Aayog Health Index 2021, Kerala has the best healthcare facilities, followed by Andhra Pradesh and Maharashtra while Uttar Pradesh and Bihar are the laggards.



Source: [CNBC](#), [IBEF Healthcare](#), [IIG](#), [IBEF FMCG](#), [IMARC](#), [GVR](#), [Financial Express](#)

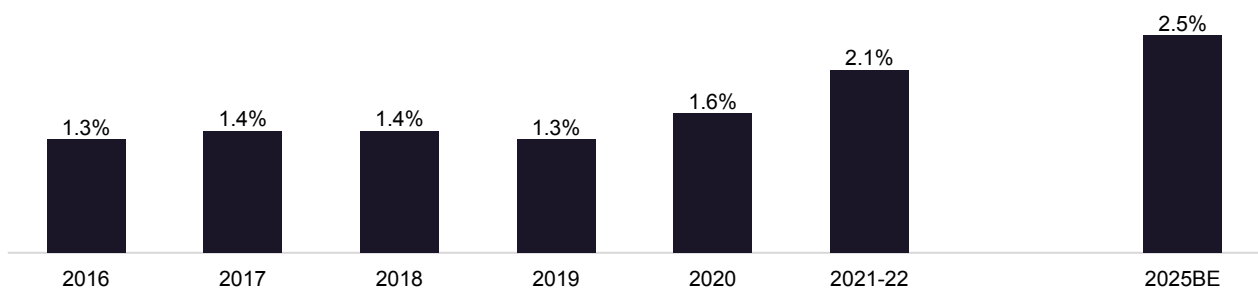
### 1.1. Healthcare Expenditure in Terms of GDP<sup>2</sup>

The government’s expenditure on the healthcare sector reached ~ USD 66 Bn\* (2.1% of the country’s GDP) in 2021-22 compared to USD 44 Bn\* (1.6% of the country’s GDP) in 2020.

The expected budget allocated to the Department of Health & Family Welfare has been increased from USD 9.4 Bn in 2020-21 to USD 10.1 Bn in 2022-23.

Per capita healthcare expenditure has been rising at a fast pace due to increasing income, easier access to high-quality healthcare facilities, and greater awareness of personal health and hygiene. It rose from USD 12.7 in 2013-14 to USD 22.1 in 2018-19 (INR 1,042 in 2013-14 to INR 1,815 in 2018-19)<sup>3</sup>. Improved health insurance penetration has also facilitated the rise in healthcare spending along with an increase in income which has resulted in the growing affordability of generic drugs in the market.

Government Healthcare Expenditure as % of GDP (2016-2025)



<sup>1</sup> Note: We have replaced financial services with the construction sector

<sup>2</sup> [IBEF](#)

<sup>3</sup> [Telegraphic India](#)

Source: [IBEF-2022](#), [India Budget](#), [Deccan Herald](#), [TOI](#)

BE – Budget Estimated

\*Calculated using GDP of India and percentage available on secondary sources

Conversion rate: 1 USD = INR 82.06

## 1.2. Key Health-Related Statistics of India

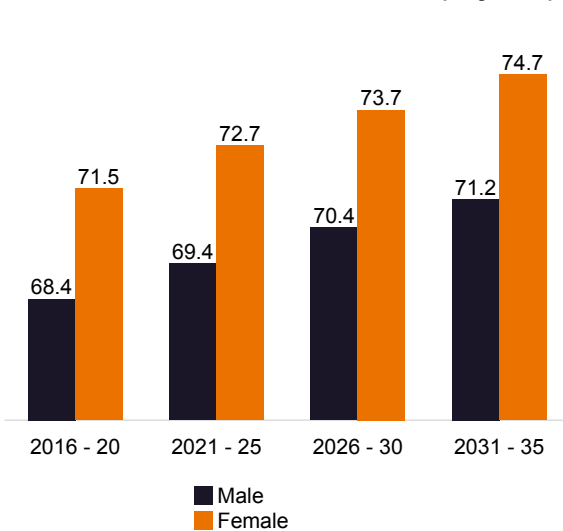
Health indicators have witnessed a steady improvement over the years. Health status is determined based on the below-mentioned parameters that are classified under three categories.

<b>Mortality by age and sex</b>	<ul style="list-style-type: none"> <li>• Life expectancy at birth</li> <li>• Under-five mortality rate</li> <li>• Infant/maternal mortality rate</li> </ul>
<b>Mortality by cause</b>	<ul style="list-style-type: none"> <li>• Maternal mortality ratio</li> <li>• TB mortality rate</li> <li>• Malaria mortality rate</li> </ul>
<b>Morbidity</b>	<ul style="list-style-type: none"> <li>• TB notification rate</li> <li>• TB prevalence rate</li> <li>• Malaria incidence rate</li> <li>• Cancer incidence, by type of cancer</li> </ul>

However, the most important indicators are life expectancy, maternal mortality, and under-five mortality which we have covered below in detail.

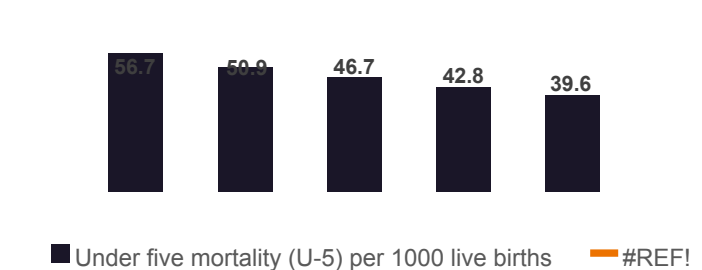
In India, maternal mortality and under-five mortality rate have been reducing over the years, which has impacted life expectancy in India. Other factors that help in increasing life expectancy are better sanitation, proper housing, and education. Life expectancy in India has increased from 69.9 years in 2021 to 70.2 years in 2022.<sup>4</sup>

**Projected Level of Expectation of Life at Birth in India, 2016–2035 (in years)**



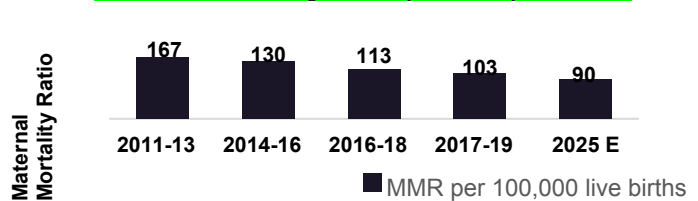
Source: [Macrotrends](#), [National Health Profile-2021](#)

**Under-five Mortality (2011–35) in India**



■ Under five mortality (U-5) per 1000 live births    ■ #REF!

**Maternal Mortality Ratio (2010-19) in India**



■ MMR per 100,000 live births

Source: [National Health Profile-2021](#), [DTE](#)

**Goal of Indian Government:**

**By 2025, increase life expectancy at birth to**

**Goal of Indian Government:**

- Reduce under-five mortality to 23 by 2025

<sup>4</sup> [Macrotrends](#), [IBEF](#)



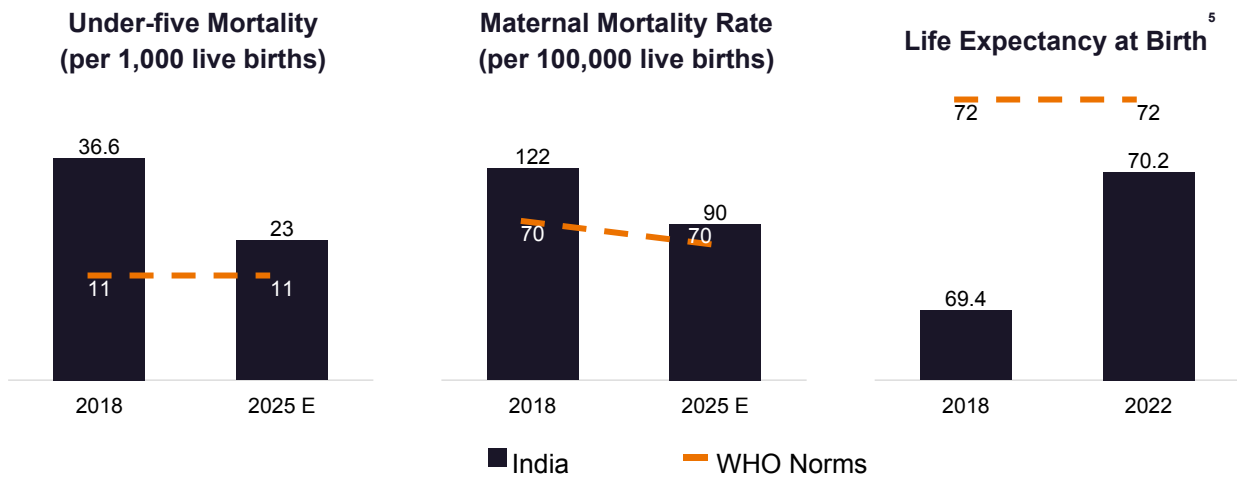
**72 for males and 76 for females (optimistic) and 67 for males and 71 for females (realistic)**

- **Decrease MMR from current levels to 90 by 2025**
- **Reduce infant mortality rate to 23 by 2025**

Source: [NITI Aayog](#)

Source: [NOA](#)

Although the Indian government is performing well to improve health indicators, it still needs improvement to meet global benchmarks and World Health Organization (WHO) recommended norms owing to a large disparity in the condition of healthcare services across states, with the most populous states being the laggards.



Source: [NOA, WHO-2019](#)

Source: [NOA, WHO - 2019](#)

Source: [Macrotrends, WHO- 2019](#)

India needs to improve on all three major health indicators. The current expected under-five mortality rate in India is 23 per 1,000 lives in 2025, which should ideally be 11 as per WHO norms. Also, the expected maternal mortality rate is 90 per 100,000 lives in 2025 whereas WHO norms suggest it should be 70. In 2022, the life expectancy in India is 70.2, which is lower in comparison to the world’s average of 72.

### 1.3. Healthcare Burden

In India, although there have been substantial achievements in controlling communicable diseases, they still contribute significantly to the disease burden of the country. The decline in morbidity and mortality from communicable diseases has been accompanied by a gradual shift to an accelerated rise in the prevalence of chronic non-communicable diseases (NCDs) — such as cardiovascular disease (CVD), diabetes, chronic obstructive pulmonary disease (COPD), cancer, mental health disorder, and injury.

#### Disease Incidence

In India, there are many diseases under communicable and non-communicable categories that kill millions of people. Non-communicable diseases account for 63% of all deaths in India, with cardiovascular diseases responsible for 25% of them and chronic respiratory disorders for 10%.

As per 2021 data, ischemic heart disease alone kills 0.17 million people in India weekly. The top 10 diseases are mentioned below along with the number of deaths:

Diseases	Top Causes of Death in India (In millions) (2020) <sup>5</sup>	% Of Total Deaths (Ages 25-69)
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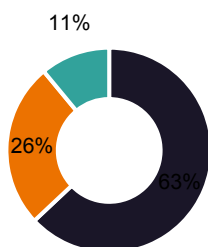
<sup>5</sup> Note: WHO’s data point has been retained from the previous report version (2020)

<sup>6</sup> Note: The table data has been retained from the previous report version (2020)

<b>Cardiovascular/ Ischemic heart diseases</b>	1.54	24.8%
<b>COPD</b>	0.96	-
<b>Malignant (Cancer) and Other Tumors</b>	0.78	9.4%
<b>Stroke</b>	0.73	-
<b>Diarrheal Diseases</b>	0.72	5%
<b>Respiratory Diseases</b>	0.51	10.2%
<b>Tuberculosis</b>	0.45	10.1%
<b>Neonatal Disorders</b>	0.43	-
<b>Asthma</b>	0.25	-
<b>Diabetes</b>	0.25	-
<b>Digestive Diseases</b>	-	5.1%
<b>Malaria</b>	-	2.8%

Source: [TOI](#), [Future Generali](#), [DTE](#)

Proportional Mortality, 2021 (%)

Source: [Stanford](#)

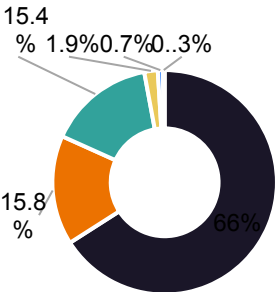
### 1.3.1. Communicable Diseases

In a recent report by the India Council of Medical Research (ICMR) published in 2017, it has been observed that the disease burden due to communicable, maternal, neonatal, and nutritional diseases dropped from 61% to 33% between 1990 and 2016. Some of the key diseases that majorly contribute to communicable diseases have been mentioned below:<sup>7</sup>

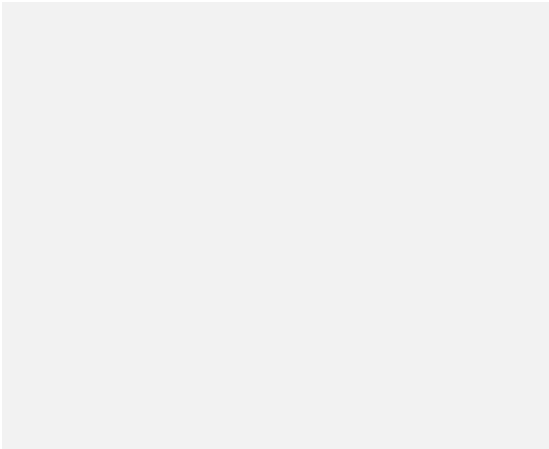
#### Vector Borne Disease Morbidity Reported In Communicable Disease, 2020 (%)

- *Malaria contributed 66% to the morbidity burden in the country followed by dengue at 16%*
- *The cases of Malaria went up to 1,86,532 in 2020*

<sup>7</sup> Note: This data point has been retained from the previous report version (2020)



Source: [National Health Profile-2021](#)

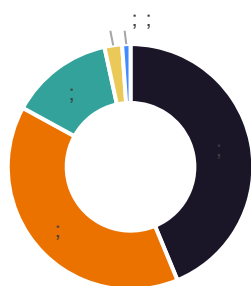


### Top Vector Borne Disease Morbidity Due to Communicable Disease, by State, 2020

Disease	Number of Cases	Leading State (Number of Cases)
Malaria	1,86,532	Odisha (41,739)
Dengue	44,585	Punjab (8,435)
Chikungunya	43,424	Karnataka (16,111)
Acute Encephalitis Syndrome	5,487	Uttar Pradesh (1,646)
Kala-Azar	2,052	Bihar (1,502)
Japanese Encephalitis	718	Assam (320)

Source: [National Health Profile-2021](#)

### Top 5 Mortality Reported in Communicable Disease, 2020 (%)



Source: [National Health Profile-2021](#)

- Acute respiratory infection contributed 44% to the mortality burden in the country followed by pneumonia at 39% and acute diarrheal disease at 14%.
- Total number of deaths due to acute respiratory infection were 5,160 during 2020. In the same year, Gujarat reported maximum number of deaths (1,338).
- Total number of deaths due to pneumonia were 4,624 in India during 2020. Delhi reported maximum number of deaths (834).

### Top 5 Diseases Responsible for Mortality Due to Communicable Disease, by State/UT, 2020

Disease	Number of Deaths	Leading State/Number of Cases
Acute Respiratory Infection	5,160	Gujarat (1,338)
Acute Diarrheal Diseases	1,606	Gujarat (371)
Enteric Fever	126	Bihar (37)
Pneumonia	4,624	Delhi (834)
Viral Hepatitis (All Cases)	273	West Bengal (41)

Source: [National Health Profile-2021](#)

### 1.3.2. Non-Communicable Diseases

In the period (1990–2016), the disease burden from non-communicable diseases increased from 30% to 55%. Chronic non-communicable disease ailments such as diabetes and hypertension have been on an accelerated rise and dominate communicable diseases in the total disease burden of the country.<sup>8</sup>

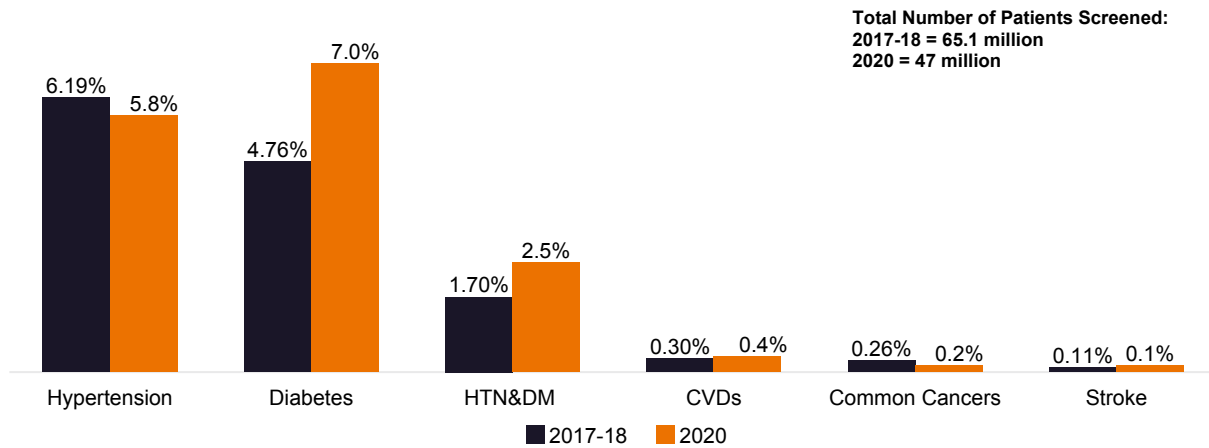
<sup>8</sup> Note: This data point has been retained from the previous report version (2020)



Out of 4,71,62,208 patients that were examined at NCD clinics in 2020, 7% of people were diagnosed with diabetes, 5.8% with hypertension, 0.4% with cardiovascular diseases, 0.1% with stroke, and 0.2% were diagnosed with common cancer. The top three common cancers that affect the Indian population are **breast, cervical and oral**.<sup>9</sup>

Within NPCDCS, 682 District NCD Clinics, 191 District Cardiac Care Units, and 5,408 Community Health Center NCD Clinics have been set up as of April 2022.<sup>10</sup>

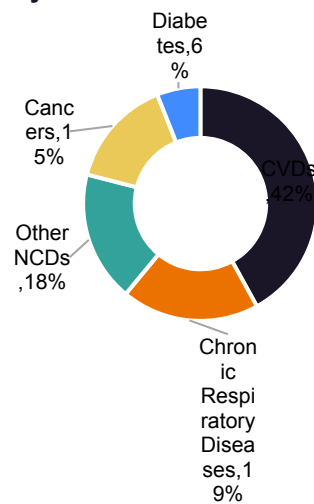
**Number of Patients Diagnosed with Different NCDs, 2017-18 and 2020 (%)**



Source: [National Health Profile-2021](#)

While NCDs accounted for 63% of all deaths in 2021, cardiovascular diseases contributed the largest number of deaths among NCDs followed by chronic respiratory diseases and cancer.

**Deaths by Non-communicable Diseases (%)**



Source: [Indian Express](#)

<sup>9</sup> [Aditya Birla](#)  
<sup>10</sup> [PIB](#)

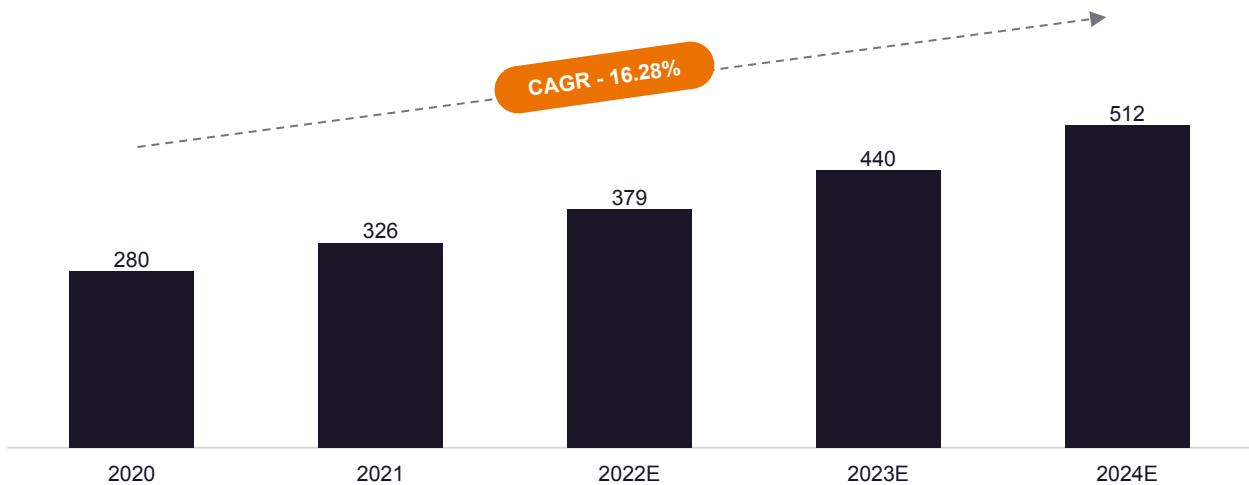
## 2. India’s Healthcare Market

The healthcare sector is unique as it has minimal seasonal and cyclical fluctuations. However, the recent COVID-19 pandemic has highlighted the vulnerabilities of the Indian healthcare system, leading to profound implications on other socio-economics aspects of the economy. Post-COVID the Indian healthcare sector has finally taken the center stage and is expected to grow at a steady rate.

The pandemic also led to the expansion of other healthcare services such as telemedicine, teleconsultation, e-pharmacies, and the home medical devices sector. The rapid expansion of the e-health sector can be seen as a prime growth driver for the Indian healthcare market.<sup>11</sup>

The Indian healthcare market has shown steady growth over the years and with the recent surge in the e-healthcare segment, the healthcare sector has been growing at a CAGR of around 16.28% since 2020. At this rate, it is estimated to be around USD 326 Bn in 2021 and is expected to reach USD 512 Bn by 2024.

Indian Healthcare Market Growth Trend, 2020-2024E (USD Bn)



Source: NITI Ayog-2021,

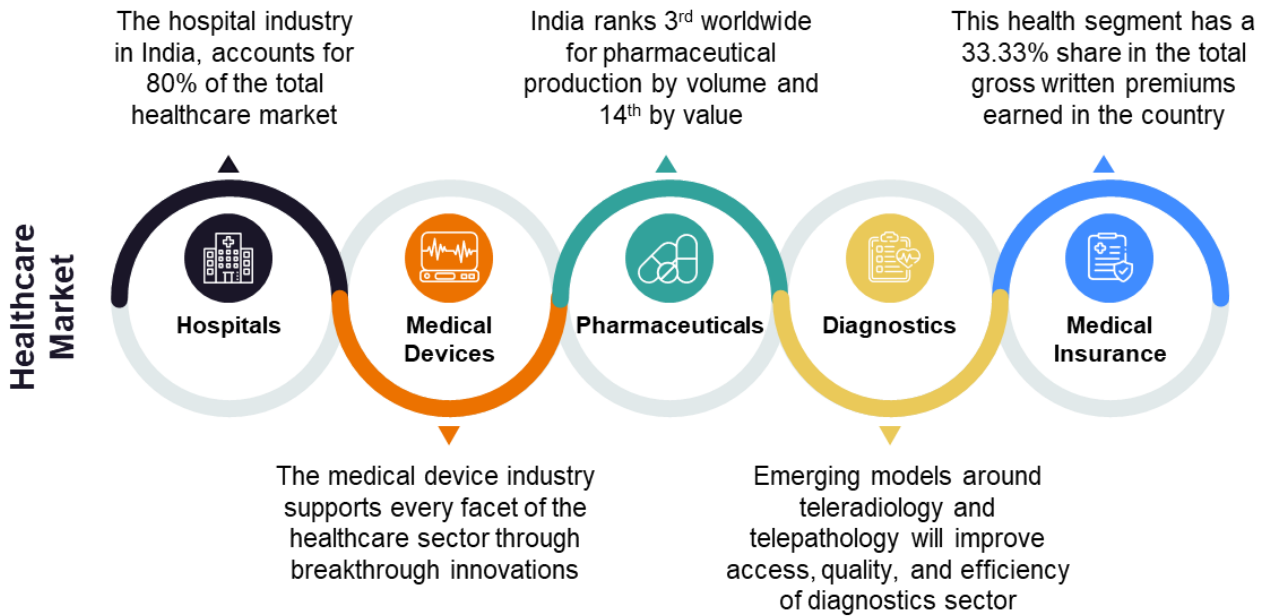
The merging of technology with medicine is the most significant growth driver for the Indian healthcare sector. Other factors such as demographic structure, rising prosperity, healthcare spending ability, broader insurance coverage, and digitization of the market (emerging technological innovations) are among the other key drivers catalyzing the growth of the Indian healthcare sector.



<sup>11</sup> [CNBCtv18](#)

### Indian Healthcare Market Structure

The healthcare market in India is linked with several interdependent markets i.e., hospitals, clinics, clinical trials, medical devices, telemedicine, pharmaceuticals, diagnostics, and medical insurance. It is broadly categorized into five sub-markets as shown below:



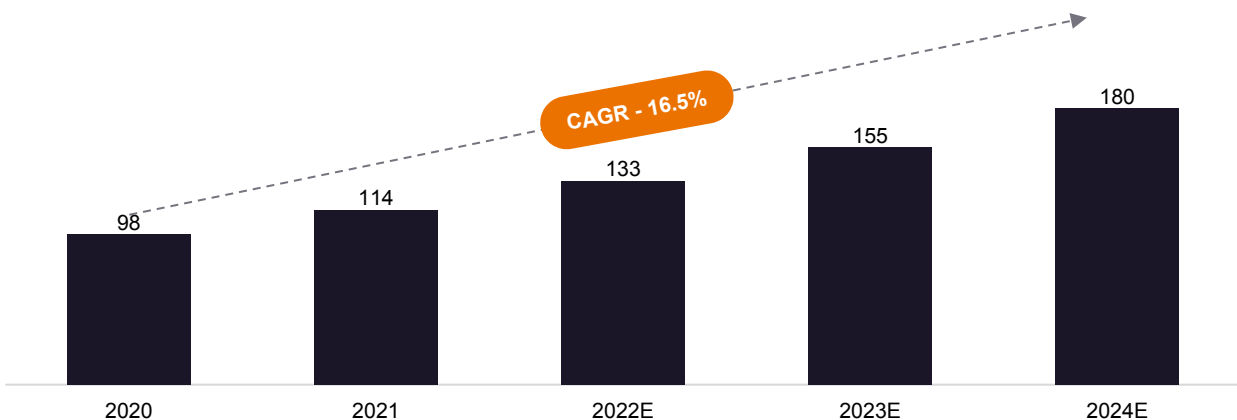
India has a mixed healthcare system, inclusive of public and private service providers across the sub-markets of Hospitals, Medical Devices, Pharmaceuticals, Diagnostics, and Medical Insurance.

### 2.1. Overview of the Hospital Market

Hospitals are an integral part of India’s healthcare sector as it constitutes around 80% of the healthcare market. This segment is a major revenue source for the Indian healthcare sector as hospitals have the largest consumer base within the sector.

The hospital market has seen significant growth over the years with a CAGR of 16-17% since 2017. At present, the market size of the hospital industry is estimated to be around USD 133 Bn and is expected to reach USD 180 Bn by 2024.

Indian Hospital Market Growth Trend, 2020-2024E (USD Bn)



Source: [Invest India](#).

The hospital industry is emerging very substantially due to rapid advancements in technologies and growth in various diseases across the country. Furthermore, the hospital market in India is also witnessing a significant investor demand from both global as well as domestic investors.

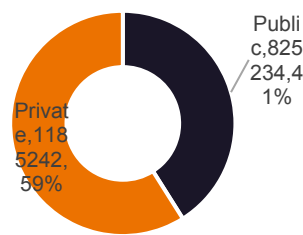
The hospital market is inclusive of public, and private hospitals, specialized centers, districts, and general hospitals. The number of public hospitals in the country has increased over the years, from 25,770 in 2018 to 44,240 in 2020. Similarly, the number of public hospital beds has also increased from 7,13,000 in 2018 to 8,25,000 in 2020.

**Share of Private Vs. Public Hospitals in Total Hospital Market, 2020 (%)**  
**Total Hospitals = 84,732**



Source: [National Health Profile-2021](#), [CDDEP-2020](#)

**Share of Private Vs. Public Beds in Hospital in Total Hospital Market, 2020 (%)**  
**Total No of Beds = 20,10,476**



Source: [National Health Profile-2021](#), [CDDEP-2020](#)

**Note: The information on public hospitals is based on 2020 data, the data on private market hospitals are based on 2019 data**

Contrastingly, in the overall hospital market, private hospitals play a key role and dominate public hospitals in terms of key parameters such as - number of hospitals, number of beds, no of ICU beds, etc. The share of private hospitals in total number of hospitals, and hospital beds were 51% and 59%, respectively.

### Hospital Capacity in India

Hospital capacity of India’s public and private health market in terms of number of hospital beds, Intensive Care Unit (ICU) beds, and ventilators:

- Approximately 20,00,000 hospital beds, 95,000+ ICU beds, and more than 48,000 ventilators are available<sup>12</sup>
- Because of COVID, the number of ICU beds and ventilators increased significantly, especially in COVID-affected states like Maharashtra. The state’s ICU bed counts have increased from 9,344 in 2020 to 39,738 in 2022. Similarly, the number of ventilators has also increased from 1,567 in 2020 to 3,436 in 2022.<sup>13</sup>
- Most of the beds and ventilators in India are concentrated in these six states: Uttar Pradesh (14%), Karnataka (13%), Maharashtra (11%), Tamil Nadu (9%), West Bengal (7%), and Andhra Pradesh (7%).

<sup>12</sup> This data point has been retained from the previous report version (2020). Note: the number of hospital beds is based on new estimation, inclusive of 2020 data. While information 9500+ ICU Beds and 4800 Ventilators are the same as before as there is no latest information available.

<sup>13</sup> [TOI](#)



### Top States with Public and Private Hospitals<sup>14</sup>

State/UT	Number of hospitals in public market (2020)	State/UT	Number of hospitals in private market (2019)
Andhra Pradesh	6,234 <span>①</span>	Uttar Pradesh	12,468 <span>①</span>
Uttar Pradesh*	4,683 <span>②</span>	Karnataka	7,842 <span>②</span>
Jharkhand	4,463 <span>③</span>	Telangana	3,247 <span>③</span>
Rajasthan*	2,849	Rajasthan	2,794
Karnataka*	2,842	Maharashtra	2,492
Tamil Nadu*	2,507	Kerala	2,062
Gujarat	2,245	Bihar	1,887
Bihar	2,132	Punjab	1,638
Odisha*	1,806	Tamil Nadu	1,222
West Bengal	1,594	Odisha	695
<b>Total Public Hospitals</b>	<b>41,245</b>	<b>Total Private Hospitals</b>	<b>43,487</b>

Source: [National Health Profile-2021](#), [CDDEP-2020](#)

### Top Ten States with Total Number of Hospital Beds<sup>15</sup>

State/UTs	Number of Hospital Beds in Public Market (2020)	Number of Hospital Beds in Private Market (2019)	Total Number of Hospital Beds (Public + Private)
Uttar Pradesh	66,700	2,05,142 <span>①</span>	2,71,842
Karnataka	70,474	1,92,388 <span>②</span>	2,62,862
Maharashtra	33,028	1,80,293 <span>③</span>	2,13,321
Telangana	5,094	78,936	84,030
Tamil Nadu	99,435 <span>①</span>	77,834	1,77,269
Kerala	38,097	61,223	99,320
Andhra Pradesh	86,721 <span>③</span>	60,092	1,46,813
Rajasthan	46,778	46,122	92,900
West Bengal	96,012 <span>②</span>	34,969	1,30,981
Madhya Pradesh	31,106	33,833	64,939
<b>India Total</b>	<b>8,25,234</b>	<b>11,85,242</b>	<b>20,10,476</b>

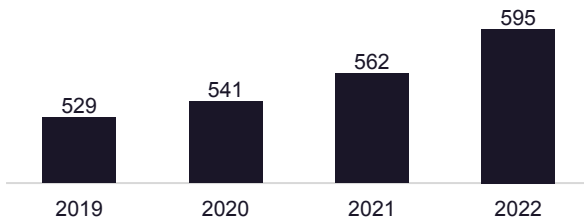
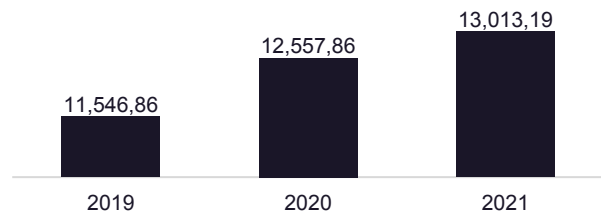
Source: [National Health Profile-2021](#), [CDDEP-2020](#)

### Doctor-to-population ratio

As per a WHO report (2021), India was way below the 44.5:10,000 ratio standard till 2018 and was just above the 2006 standard of 22.8 healthcare workers per 10,000 population. However, as per the current claims of the Ministry of State for Health and Family Welfare, India's doctor-population ratio exceeds the WHO's recommendation. As of November 2021, the total number of allopathic doctors registered with State Medical Councils and the National Medical Commission was 13,01,319.

<sup>14</sup> Note: The information on public hospitals is based on 2020 data, the data on private market hospitals is based on 2019 data.

<sup>15</sup> Note: The information on public hospital beds is based on 2020 data, the data on private market hospital beds is based on 2019 data.

**Growth in Number of Medical Colleges,  
2019-2022**Source: [IBEF-2022](#)**Growth in Number of Doctors,  
2019-2021**Source: [IBEF-2022](#)

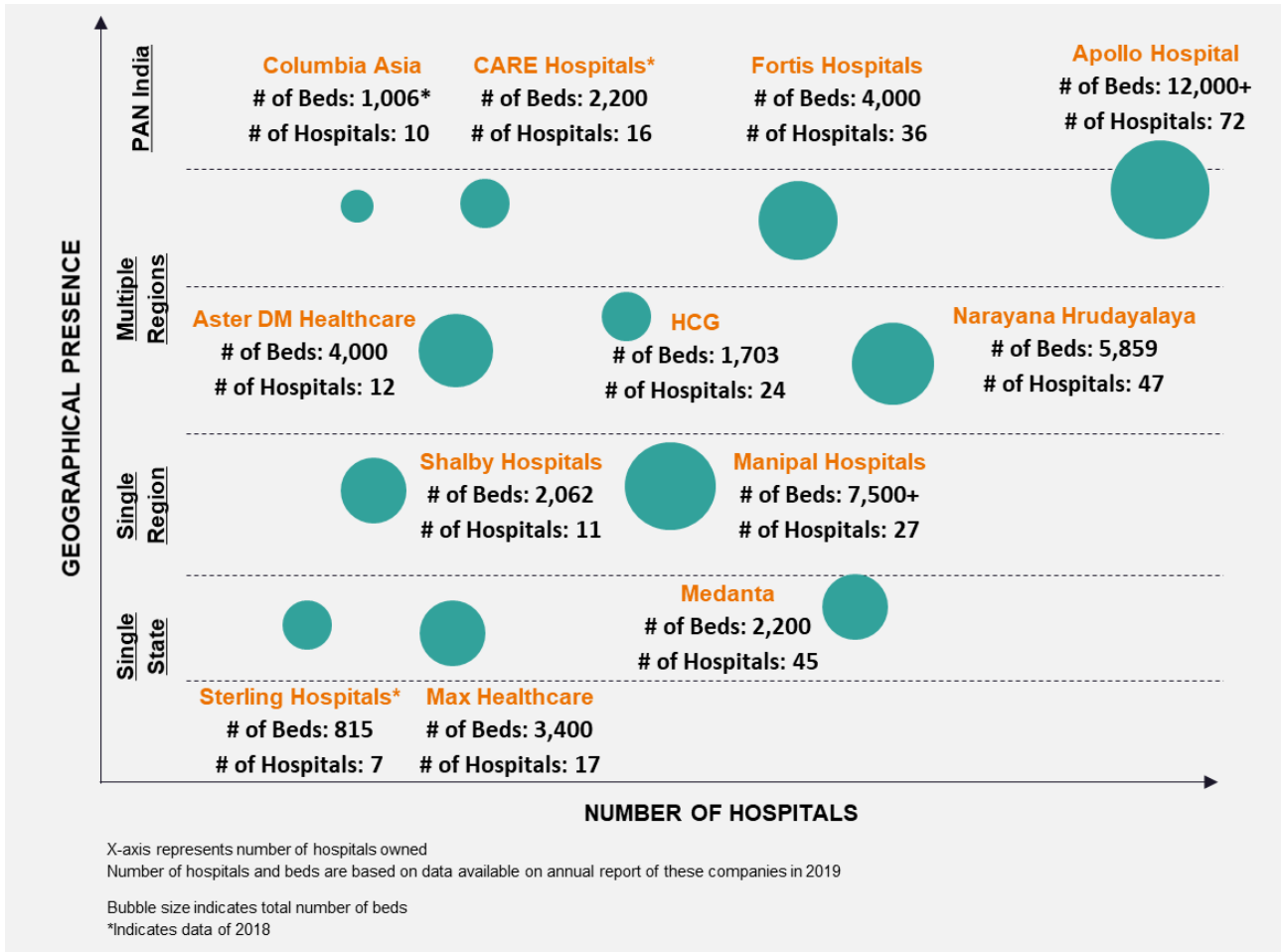
Assuming an 80% availability of registered allopathic doctors and 565,000 Ayurvedic, Unani, Siddha, and homeopathic doctors, India's doctor-population ratio is 1:834, exceeding the WHO standards of 1:1000 doctor's patient ratio. However, experts say that the inclusion of 5,65,000 AYUSH doctors in the calculation is misleading, as practitioners of traditional medicine are usually not included in the WHO formula, which is "globally applicable for comparative assessment".<sup>16</sup>

The government is investing heavily in this market due to which the number of medical colleges in India increased from 529 in 2019 to 595 in 2022 and the number of doctors increased from 1,154,686 in 2019 to 1,301,319 in 2021.

**Top Players in the Indian Private Hospital Market in 2022 and Their Positioning<sup>17</sup>**

In India, there are several players present at the regional level such as MAX healthcare and there are others that are present at the PAN-India level such as Columbia Asia. Apollo is the leading player in the Indian hospital market in terms of geographical presence, business span, and breadth of service offerings.

<sup>16</sup> [FactChecker](#)<sup>17</sup> *Company websites and Annual Reports of Hospitals*



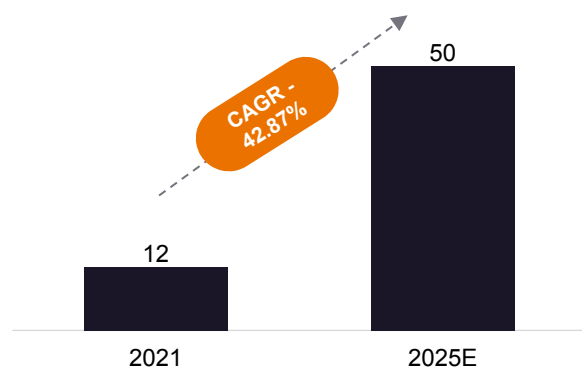
## 2.2. Overview of Indian Medical Devices Market

The Medical Devices industry is a sunrise sector and is highly capital-intensive in nature. The sector has the potential of growing the highest among all the healthcare sectors. The medical equipment sector requires significant inductions of modern technologies originating from a well-developed and innovative ecosystem. The country’s medical device industry is one of the fastest-growing markets in the world and is growing at a CAGR of 42.87%. At this rate, the medical device market is expected to reach USD 50 Bn by 2025.

### Indian Medical Devices Market Growth Trend, 2021-2025E (USD Bn)

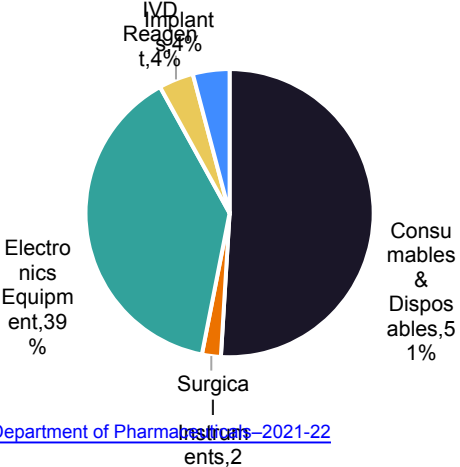
The Indian medical devices market was valued at USD 12 Bn in 2021. Considering the current growth trajectory of the industry, the government is actively taking supportive measures such as promoting indigenous manufacturing of high-tech medical devices, production-linked incentive schemes (PLIs) on medical devices, boosting new medical devices parks, etc. to boost the overall growth of the domestic medical devices market in India.

India imports about 80% of the medical devices, out of which 17.8% are imported from China, 15.8% from the USA, 10.7% from Germany, 8.3% from Singapore, and 3.8% from Japan.



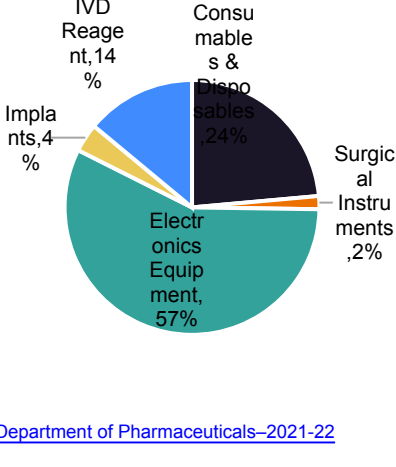
Source: [IBEF-2021](#)

**Medical Devices Share in Exports by Segment, 2021 (%)**



Source: [Department of Pharmaceuticals-2021-22](#)

**Medical Devices Share in Imports by Segment, 2021 (%)**



Source: [Department of Pharmaceuticals-2021-22](#)

In terms of segment, Consumables & Disposables dominated the export market with a 51% share. While the electronic equipment segment was among the highest imported medical devices by India with a share of 57% in 2021.

Orthopedic prosthetics and patient-aid segments were expected to be the two fastest-growing verticals by 2020 and are projected to grow at a CAGR of 9.6% and 8.8%, respectively. During 2015-2020, both diagnostic imaging and consumables grew at a healthy CAGR of 7.1%.



### Top Players in Indian Medical Devices Market

The medical devices market in India consists of large multinationals as well as small and medium enterprises (SMEs). Around two-thirds of the manufacturers in India are mostly domestic players (750–800 domestic manufacturers).

### Indian Medical Devices Market Structure<sup>18</sup>

750 Medical Device Manufacturing Firms



Source: [Association of Indian Medical Device Industry \(AIMED\)](#)

### 2.3. Overview of Indian Pharmaceutical Market

India is one of the leading countries in terms of global pharmaceutical production. It ranks 3<sup>rd</sup> worldwide in terms of production by volume and 14<sup>th</sup> by value in the global pharmaceutical market.<sup>19</sup>

The Pharma industry has been consistently earning a trade surplus. During 2020-21, the net exports of the industry were at USD 17.68 Bn with a total export of USD 24.35 Bn and an import of USD 6.66 Bn.

**Import:** Around 80% of Active Pharmaceutical Ingredients (APIs) are imported from China. India’s organic chemical imports from China were around 38% of its total organic chemical imports during 2018-19.<sup>20</sup>

**Export:** India exports generic medicines to about 200 countries. Nearly, 55% of India’s pharmaceutical medicines are exported to highly regulated markets. India is one of the largest exporters of formulations in terms of volume, with a market share of 14%.

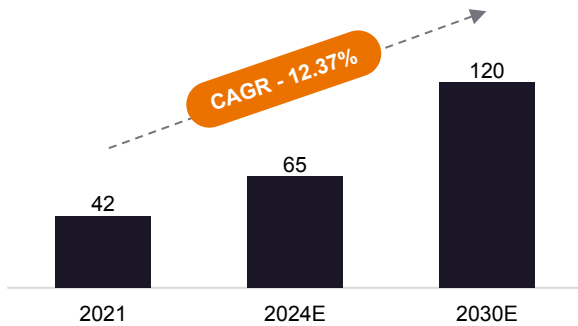
The Indian Pharmaceutical industry comprises a network of 3,000 drug companies and a manufacturing base of 10,500 units. In the past 9 years, the domestic pharma industry has grown at a substantial CAGR of 9.43%, as per the economic survey 2021. The market is estimated to grow aggressively in the next two-three years and is expected to reach around USD 65 Bn by 2024.

<sup>18</sup> Note: This data point has been retained from the previous report version (2020)

<sup>19</sup> [Business Today](#)

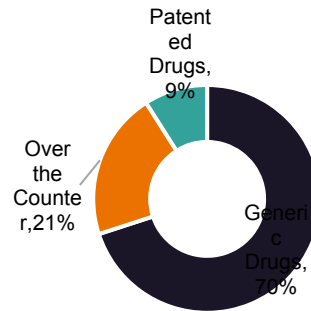
<sup>20</sup> [Indian Express, Technology Information, Forecasting & Assessment Council–2020](#)

**Indian Pharmaceutical Market Growth Trend, 2021–2030E (USD Bn)**



Source: [IBEF-2022, Department of Pharmaceuticals-2021-22](#)

**Indian Pharmaceutical Market Segments and their share in % (2019)<sup>21</sup>**



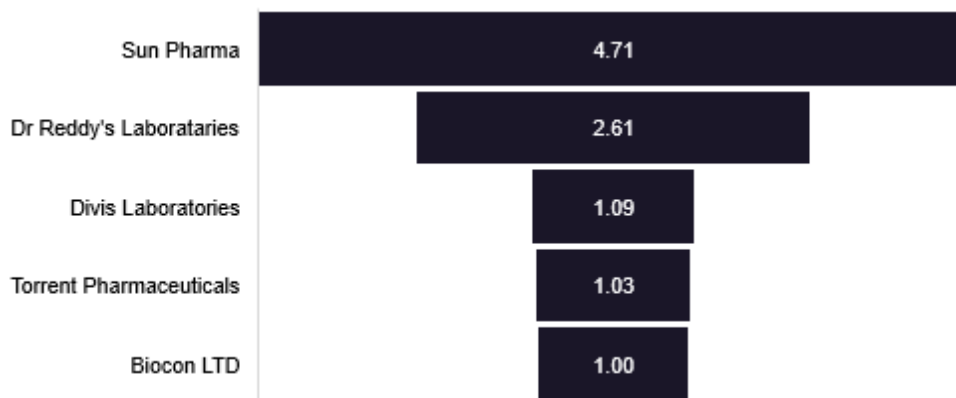
Source: [IBEF-2022, Department of Pharmaceuticals-2021-22](#)

Indian Pharmaceutical Industry is segmented into generic drugs, OTC medicines, bulk drugs, vaccines, contract research & manufacturing, biosimilars, and biologics. India’s OTC drugs market was valued at USD 7.62 Bn in 2021 and is estimated to reach USD 18.49 Bn by 2026 at a CAGR of 19.4%.

**Top Players in Indian Pharmaceutical Market**

Some of the major players in the Indian pharmaceutical market include Sun Pharmaceuticals, Divis Laboratories, Dr. Reddy’s, Torrent, and Abbott. The Indian pharmaceutical companies are now seeking to move up the global pharmaceutical value chain by investing in R&D for drug development, drug repurposing, process improvements, and digital manufacturing. Below mentioned are the revenues of leading players for 2021-22.

**Revenue of Top Five Players of Indian Pharmaceutical Market, FY2021-22(USD Bn)**



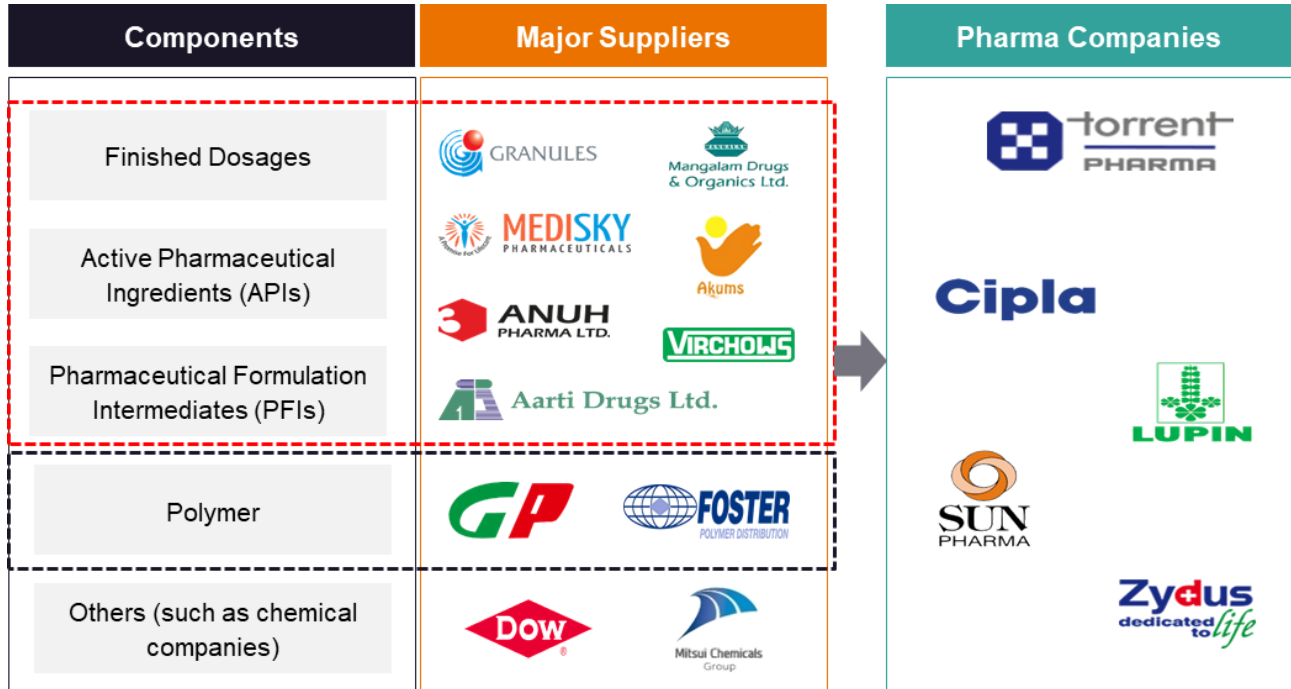
Source: Company websites, Factiva, and Annual reports  
 Note: Std. conversion rate for USD 1 = 82.06 INR

Leading companies like Sun Pharma plan to develop more products through expanded R&D teams for global markets, focusing on more complex products across multiple dosage forms and investments in specialty pipelines.

<sup>21</sup> Note: This data point has been retained from the previous report version (2020)

### Indian Pharmaceutical Market Structure<sup>22</sup>

APIs, finished dosages, and PFIs are the major components supplied by back-end stakeholders (ingredient companies) to pharma companies. Indian pharma industry manufactures 60,000 generic brands across 60 therapeutic categories and manufactures more than 500 different APIs.



Source: Company websites and Annual reports, Research analysis

### Future Potential of the Indian Pharmaceutical Market

Medicine spending in India is projected to grow between 9-12% over the next five years (2020-2025), directing India to become one of the top ten countries in terms of medicine spending.

The alignment of a product portfolio towards chronic therapies for diseases such as acute respiratory diseases, communicable/infectious diseases, cardiovascular, antidiabetics, anti-depressants, and anti-cancer is in high demand.<sup>23</sup>

The API consumption in India is expected to reach USD 18.8 Bn by 2022. Similarly, the domestic market of Biosimilars is also expected to reach USD 35 Bn by 2030.<sup>24</sup>

<sup>22</sup> This data point has been retained from the previous report version (2020)

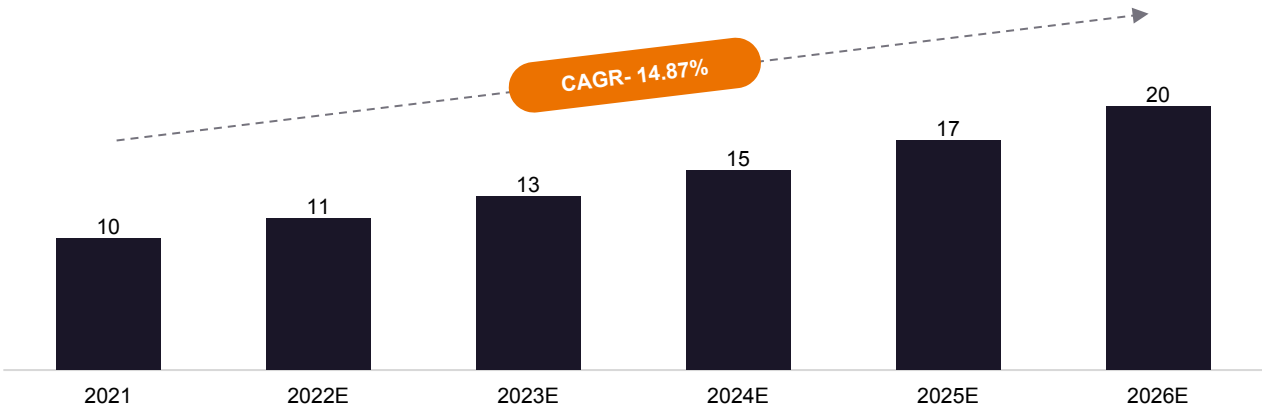
<sup>23</sup> [IBEF-2020](#)

<sup>24</sup> [IBEF-2022](#)

### 2.4. Overview of the Indian Diagnostics Market

Due to a significant shift from prescriptive to preventive healthcare and access to quality healthcare, the Indian diagnostics market is expected to grow at a CAGR of ~14.87% to USD 20 Bn by 2026 compared to USD 10 Bn in 2020.

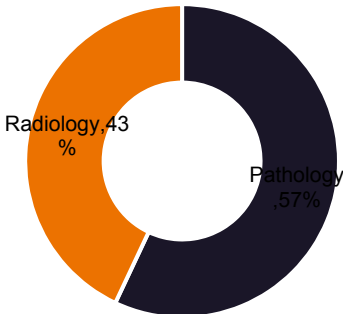
Indian Diagnostic Market Growth Trend, 2021-2026 (USD Bn)



Source: [Praxis-2022](#)

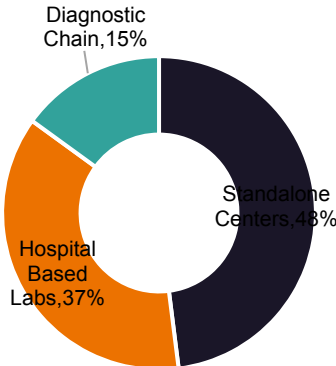
Given the growth potential of this market, the government is taking several initiatives to make diagnostics more accessible and affordable.

Diagnostic Market Segments, 2022 (%)



Source: [Praxis-2022](#)

Distribution of Diagnostic Centers, 2022 (%)



Source: [Praxis-2022](#)

The diagnostics market in India is highly fragmented. It can be classified into pathology testing services and imaging diagnostic services or radiology. The standalone centers and hospital-based labs together constitute 85% of the diagnostics market. This fragmentation poses a challenge in terms of capability, scalability, and quality of labs. However, it also provides an opportunity for fresh players to enter the competition.



### Top players in Indian Diagnostic Market

As a result of increased competition in Metros and Tier-1 cities, lab chains are undertaking aggressive expansion in Tier 2+ cities through asset-light models. Some of the major players in this market are mentioned below with a few data points:

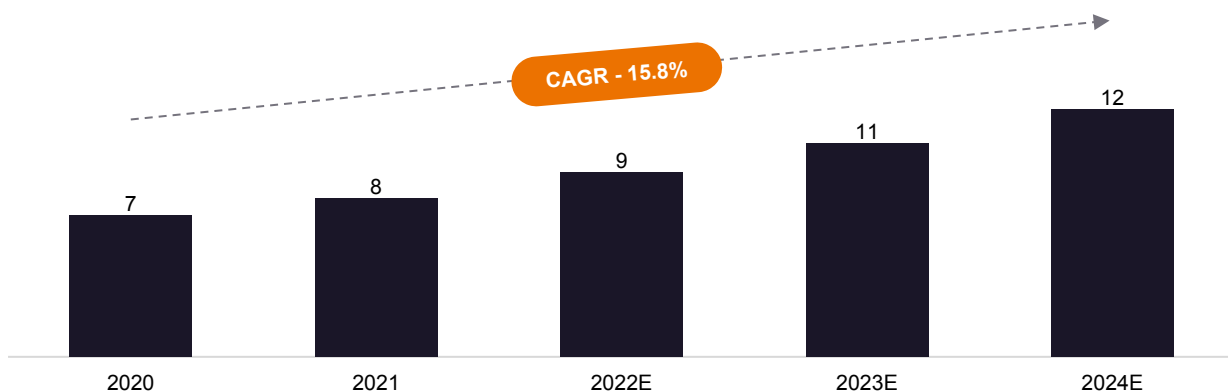
Company Name	Domestic Presence	Revenue – USD Mn (2021–2022)	No. of Centers	No. of Reference Laboratory
<b>Dr. Lal’s Path Lab Limited</b>	PAN India	251.4	Clinical Labs –277 Patient service centers – 4,731 Pickup points – 10,599	National: 1 at Delhi Regional: 1 at Kolkata
<b>SRL Diagnostics</b>	PAN India	192.3	Clinical Labs –426 Patient service centers – 2,500 Pickup points – 5,000	Regional: 4 laboratories, each at Mumbai, Gurugram, Kolkata, and Bengaluru
<b>Metropolis</b>	PAN India	147.9	Clinical Labs –171 Patient service centers – 3,134 Pickup points – 9,000	National: 1 at Mumbai Regional: 12 laboratories, each at Rajkot, Guwahati, Raipur, New Delhi, Surat, Bengaluru, Kochi, Pune, Chennai, and Kolkata in India and each in countries such as Kenya and Sri Lanka
<b>Thyrocare Technologies Limited</b>	PAN India	67.7	Authorized Service Providers – 3,379 Collection points – over 30,000	National: 1 at Navi Mumbai Regional: 8 laboratories, each at New Delhi, Mumbai, Patna, Kolkata, Bhopal, Hyderabad, Coimbatore, and Bengaluru.

Source: Company websites and Annual reports

### 2.5. Overview of Medical Insurance Market

The health insurance market in India is the fastest-growing segment in the non-life insurance market. It is currently valued at USD 9 Bn and is expected to reach USD 12 Bn by 2024 at a CAGR of 15.80%. The segment currently holds a 33% share in the total gross written premiums earned in the country.

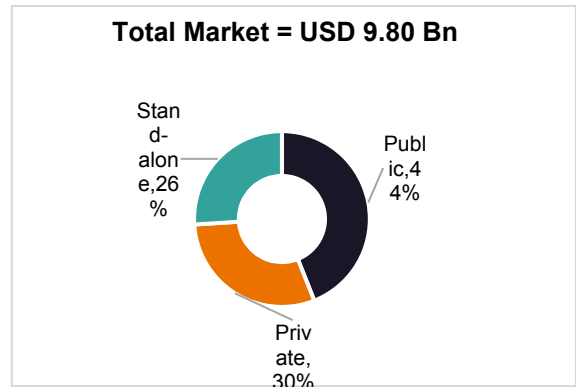
**Total Health Insurance Premium Collection in India, 2020-2024 (in USD Bn)**



Source: [IBEF-2022](#)

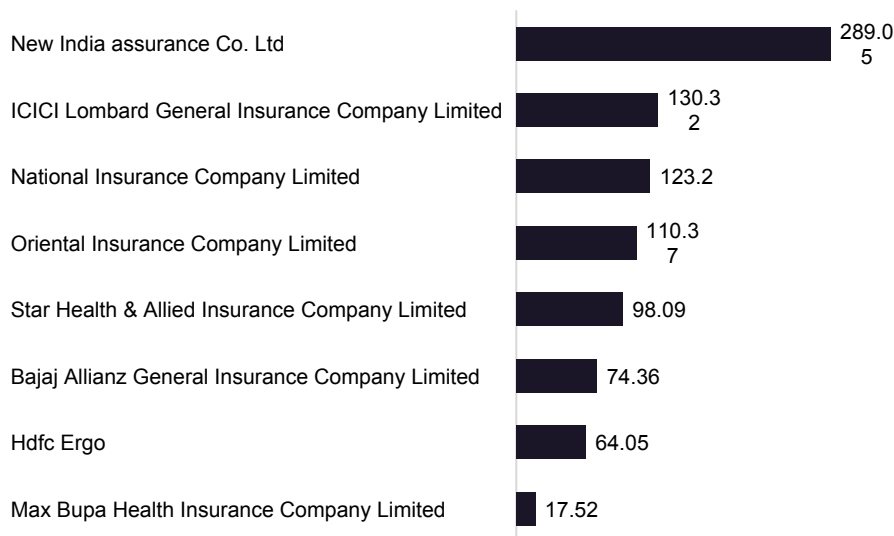
Health insurance service providers in India include public market institutions, private institutions, and stand-alone insurers. In 2022, the share of private market institutions in the health insurance sector significantly increased compared to 2019. The private sector held 30% of the market while the public sector share was reported at 44%. New India Insurance Co. Ltd and National Insurance Co Ltd. are the largest public market players in the market, with Star Health as the first and biggest standalone player. Apollo Munich, Cigna, Religare, and Max Bupa are some of the leading private players in the market. Below is the information on premiums earned by major players in the health insurance sector.

**Share of Public and Private Institutes in Indian Health Insurance Market, 2022 (%)**



Source: [Religare Annual Report 2021-22](#)

**Distribution Premium Earned by Major Players, 2021-22 (USD Bn)**



Source: Company Websites and Annual reports

### Improvement in Penetration of Private Health Insurance<sup>25</sup>

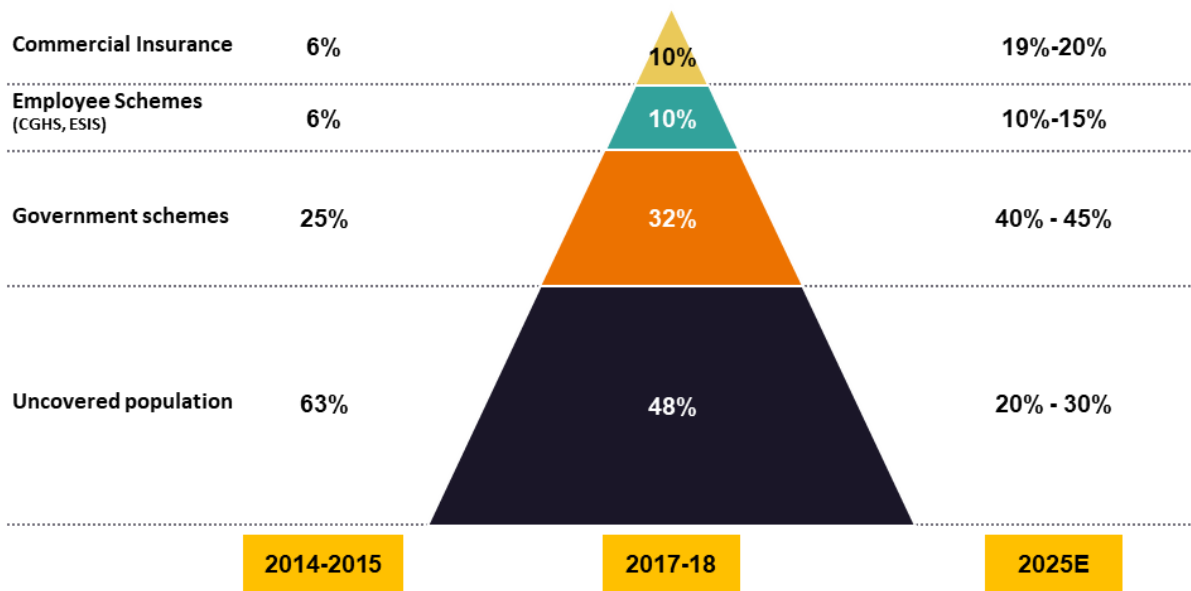
Affordable healthcare has emerged as a primary need in recent years. In this scenario, the government formulated the National Health Policy 2017 (NHP) under the aegis of which a target was set to increase healthcare spending to 2.5% of the GDP by 2025. This was followed by the launch of the ambitious Ayushman Bharat Yojana — a National Health Protection scheme that aims to provide coverage up to USD 0.006 Mn (INR 5 lakh) per family for secondary and tertiary care hospitalizations. This scheme will cover close to 110–120 million of the poorest families, which is estimated to be 600 million beneficiaries – approximately 45% of the population.

This initiative coupled with the improvement in penetration of private health insurance and coverage is projected to grow close to 70%-75% by 2025.<sup>26</sup>

<sup>25</sup> Note: This data point has been retained from the previous report version (2020)

<sup>26</sup> [FICCI-2019](#)

**Population Coverage** **Changing payer mix: Individual to institutional**



Source: [FICCI-2019](#)

### 3. Government Initiatives and Targets<sup>27</sup>

In recent times, the Government of India has placed a higher emphasis on health on its political agenda. The country is focusing on major points such as universal health, preventive health, affordable healthcare, supply-side interventions, mission mode intervention, health infrastructure, digitalization, and self-reliant manufacturing.

The Indian government has committed to making significant increases in public spending on healthcare. So, the Union Budget allocated ~USD 10.5 Bn in 2022-23 to the health sector, which is a hike of ~16.6% over USD 9 Bn in 2020-21. Out of the USD 10.5 Bn, USD 10.1 Bn was allocated to the Department of Health and Family Welfare, while USD 0.4 Bn was allocated to the Department of Health Research.<sup>28</sup> This was driven by the government’s focus on centrally sponsored public health schemes to continue building sustainable healthcare infrastructure and ensure system preparedness to manage the increasing healthcare needs of the country.

The healthcare sector recently witnessed increased public spending with a focus on strategically increasing patient access by developing more hospitals, gauging the interest of hospitals/investors by the launch of digital health and mental health programs, and providing employment opportunities by increasing the allocation of human resources.

FDI inflows to the India’s hospital/medical infrastructure is also expected to reach around USD 25.52 Bn by 2025, with an estimated 600 opportunity areas for investment.

The National Health Policy 2017 calls for more than doubling government health spending to reach 2.5% of GDP by 2025, to achieve an ambitious set of goals and targets to improve the population’s health status and its access to quality health services.

<sup>27</sup> [KPMG Niti.Gov-2019](#), [Walk Water Talent-2019](#), [The Hindu-2019](#), [National Health Mission-2018](#), [Arogya Legal-2020](#), [PMNDP-2018](#), [SUGAM-2019](#), [NHP - 2021](#), [PIB 2020](#), [PIB - 2021](#), [IBEF- 2022](#), [PIB 2022](#), [Business-Standard-2020](#)

<sup>28</sup> [Financial Express](#)

Below is a timeline showing the most recent developments in government initiatives for healthcare in India:<sup>29</sup>

2014	<p><b>TB Mission 2020</b></p> <p>The program was launched by the Government of India with a vision to achieve TB free India. The program provides, various free of cost, quality tuberculosis diagnosis and treatment services across PAN India through the government health system.</p>
2014	<p><b>Mission Indra Dhanush</b></p> <p>The mission was launched by the Ministry of Health and Family Welfare with the purpose of immunizing all children up to two years of age and pregnant women against seven vaccine preventable diseases, namely diphtheria, pertussis, tetanus, polio, tuberculosis, measles, and hepatitis B. The mission has been followed by its two intensified versions with a target to achieve full coverage by 2020.</p>
2015	<p><b>National AYUSH Mission</b></p> <p>This initiative was launched to promote Ayurveda, Yoga, Unani, Siddha and Homeopathy for health and well-being through cost-effective AYUSH services co-located at primary health centers, community centers, and district hospitals. Other responsibilities under the mission include strengthening of AYUSH educational institutions; quality assurance of Ayurveda, Unani, Siddha, and Homeopathy drugs; and sustaining the availability of raw materials. The government has allocated ~USD 299 Mn for the mission in FY 2019-20.</p>
2015	<p><b>E-health</b></p> <p>As a part of Digital India Campaign, e-health was launched to improve electronic healthcare infrastructure for patients across the country. Under this, initiatives such as Kilkari, Mobile Academy, ANM Online (ANMOL), Mera Aspataal, e-hospital, e-rakthkosh, etc., have been rolled out during 2015-2017.</p>
2016	<p><b>Integrated Health Information Platform (IHIP)</b></p> <p>A single platform designed to provide real-time data on disease surveillance, including outbreak detection and response; patient treatment and management for multiple health programs; and other critical health management information. The aim is to improve public health surveillance and response, the quality and coverage of care, and overall health system performance</p>
2016	<p><b>Pradhan Mantri National Dialysis Programme (PMNDP)</b></p> <p>The programme is a part of the National Health Mission (NHM) and aims to provide free dialysis services to the poor under NHM in PPP (Public-Private Partnership) mode.</p>
2016	<p><b>Biomedical Equipment Management &amp; Maintenance Program (BMMP)</b></p> <p>This is an initiative by Ministry of Health and Family Welfare to provide support to state governments to outsource medical equipment maintenance comprehensively for all facilities. This will ensure improvement in the functionality and life of equipment and simultaneously improving healthcare services in public health facilities — reducing the cost of care and improving quality of care.</p>
2017	<p><b>National Health Policy, 2017</b></p> <p>The policy focusses on primary health care assurance through “Health and Wellness Centers” including care of major non-communicable diseases, mental health, geriatric health care, palliative care, and rehabilitative care services. The policy proposes free drugs, free diagnostics, and free emergency and essential health care services in all public hospitals in a bid to provide access and financial protection.</p>
2017	<p><b>Medical Devices Rules, 2017</b></p> <p>New medical device rules have been framed and published under Drugs and Cosmetics Act to provide separate legal framework for regulation of medical devices. The new rules will facilitate expeditious approval of medical devices with comprehensive quality requirements to be followed by marketers / importers / manufacturers / sellers of notified medical devices.</p>
2018	<p><b>Ayushman Bharat</b></p>

<sup>29</sup> Note: The data points have been retained from the previous report version (2020), initiatives from 2014-2019

	<p>It is a national initiative with two main components:</p> <ul style="list-style-type: none"> <li>• Establishment of 150,000 Public Sector Health and Wellness Centers that will provide a package of free, comprehensive primary health-care services; focus on health promotion and disease prevention, detection, and management; and link with hospitals and specialists to ensure continuity of care.</li> <li>• PMJAY financial protection scheme that will enable 500 million poor, near poor and vulnerable people (nearly 40% of India's population) to receive free hospital care costing up to about USD 7,000 per year in public hospitals, as well as in private hospitals contracted by the government, to reduce out-of-pocket payments and catastrophic health expenditures.</li> </ul>
2019	<p><b>SUGAM</b></p> <p>SUGAM is an e-governance system which was introduced by CDSCO as a part of Digital India Campaign, for online processing of applications, linking of CDSCO HQ with other offices, laboratories, and for maintenance of database to promote ease of doing business.</p> <p><b>WHO India Country Cooperation Strategy (CCS) 2019–2023: A Time of Transition</b></p> <p>Launched by the Union Health Ministry of India, CCS provides a strategic roadmap for WHO to work with the Indian government towards achieving its health sector goals; improving the health of its population; and bringing in transformative changes in the health sector. WHO's technical support to the Government of India will fall under the following four strategic priorities to contribute to India's health agenda:</p> <ul style="list-style-type: none"> <li>• Accelerate progress on Universal Health Coverage</li> <li>• Promote health and wellness by addressing determinants of health</li> <li>• Better protect the population against health emergencies</li> <li>• Enhance India's global leadership in health</li> </ul>
2020	<p><b>Pradhan Mantri Garib Kalyan Package: Insurance Scheme</b></p> <p>'Insurance Scheme for Health Care Workers Fighting COVID-19' was launched on 30 March 2020 to provide comprehensive personal accident cover of USD 5 Mn to 2.2 Mn healthcare providers including community health workers and private health workers who may have been in direct contact and care of COVID-19</p>
2021	<p><b>PM Ayushman Bharat Health Infrastructure Mission</b></p> <p>It was launched on 25 October 2021 to accomplish the vision of comprehensive healthcare across the country, with an outlay of USD 7.8 Bn, to strengthen health infrastructure at mission mode approach and improve primary, secondary and tertiary, and elaborates 3 aspects:</p> <ol style="list-style-type: none"> <li>1. The first aspect is to strengthen grass root public health institutions, by creation of facilities for diagnostics and treatment</li> <li>2. The second aspect is to expand and build an IT-enabled disease surveillance system for Public Health Emergencies</li> <li>3. The third aspect is the expansion of research on COVID-19 and other infectious diseases</li> </ol>
2022	<p><b>Ayushman Bharat Digital Mission (ABDM)</b></p> <p>Three key registries namely Health ID, Health Professional Registry (HPR), Health Facility Registry (HFR) and digital infrastructure for data exchange have been developed and were implemented in 6 UTs, in 2020. On 27 September 2021, the national rollout of ABDM was announced. As on date, USD 5.48 Mn has been released to the National Health Authority (NHA) for implementation of ABDM</p> <p><b>Liberalized Pricing &amp; Accelerated National COVID-19 Vaccination Strategy</b></p> <p>This strategy was implemented on 1 May 2021, wherein every month, the Government of India will procure 50% of the vaccine doses that have been cleared by the Central Drugs Laboratory, which then will be provided to the State Governments at zero cost. The remaining 50% of the vaccine doses will be available for direct procurement by the State Governments and private hospitals</p>
2022	<p><b>Tele Mental Health Assistance and Networking Across States (Tele-MANAS)</b></p> <p>Launched during the occasion of World Mental Health Day, the plan aims to provide free tele-mental health services all over the country round the clock, particularly catering to</p>

people in remote or under-served areas. The government also envisions linking Tele-MANAS with other services such as National tele-consultation service, e-Sanjeevani, Ayushman Bharat Digital Mission, mental health professionals, Ayushman Bharat health and wellness centers and emergency psychiatric facilities professionals and Ayushman Bharat

#### Union Budget 2022-23

The Budget 2022-23 allocated USD 10.1 Bn to the Department of Health and Family Welfare, in line with the government's continuous efforts for overall health system strengthening. As part of the package, below allocations were made:

- **Pradhan Mantri Swasthya Suraksha Yojana (PMSSY)** was allocated USD 1,218.62 Mn, to boost the medical education infrastructure and set up AIIMS across the country
- **Human Resources for Health and Medical Education** was allocated USD 913.96 Mn to further expand the efforts to bridge the shortage of healthcare professionals in the country
- **National Centre for Disease Control (NCDC) Branches** were allocated USD 8.7 Mn to augment disease surveillance of zoonotic diseases and other neglected tropical diseases surveillance
- **National Health Mission (NHM)** was allocated USD 4,508.89 Mn, which is an increase of 1.2% compared to 2021-22

#### Some of the Key Ongoing Initiatives are:<sup>30</sup>

- **NITI Aayog's 'Vision 2035':** Public Health Surveillance in India: Released in December 2020 with a vision to:
  - Make India's public health surveillance system more responsive and predictive to enhance preparedness for action at all levels
  - Citizen-friendly public health surveillance system to ensure individual privacy and confidentiality, enabled by a client feedback mechanism
  - Improve data-sharing mechanism between center and states for better disease detection, prevention, and control
  - Provide regional and global leadership in managing events that constitute a public health emergency of international concern
- **Public Private Partnership:** The recent times have impacted healthcare collaborations between public and private sectors in a positive direction, as never before in diagnostics, technology, and treatment, such as the CoWin portal, a technology-backed public-private portal for the world's largest COVID-19 vaccination drive in India
- **National AYUSH Mission:** This Mission would continue as a centrally sponsored scheme till 2026. Under the scheme, old and traditional medicinal systems would be promoted, and Ayush wellness centers, medical colleges, hospitals, and dispensaries set up and upgraded
- **Ayushman Bharat Digital Mission:** This mission aims to develop the overall support for the integrated digital infrastructure in India. This would bridge the gap amongst different stakeholders of the healthcare sector through digital ways

<sup>30</sup> [IBEF](#), [Economic times](#), [PIB](#), [Weforum](#), [EconomicTimes2](#)





### Selected targets of the National Health Policy 2017<sup>31</sup>

Health system financing, health utilization, and health management information	Women's and children's health	Communicable and non-communicable disease burden
<ul style="list-style-type: none"> <li>• Increase government health expenditure as a percentage of GDP from 1.15% to 2.5% by 2025</li> <li>• Increase health spending by states to more than 8% of their budgets by 2020</li> <li>• Decrease the proportion of households facing catastrophic health expenditure from current levels by 25% by 2025</li> <li>• Increase utilization of public health facilities from current levels by 50% by 2025</li> <li>• Ensure a district-level electronic database of information on health system components by 2020, and establish a federated integrated health information architecture by 2025</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce infant mortality to 28 deaths per 1,000 live births by 2019 and under-five mortality to 23 per 1,000 live births by 2025</li> <li>• Reduce maternal mortality ratio to 90 per 100,000 live births by 2025</li> <li>• Reduce neonatal mortality rate to 16 per 1,000 live births and stillbirths to "single digit" by 2025</li> <li>• Ensure more than 90% of infants are fully immunized by one year of age by 2025</li> <li>• Reduce the prevalence of stunting to 40% in children under five years by 2025</li> </ul>	<ul style="list-style-type: none"> <li>• Achieve and maintain a cure rate of more than 85% in new sputum-positive patients for TB and achieve elimination status by 2025</li> <li>• Reduce premature mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases by 25% by 2025</li> <li>• Achieve a 90–90–90 target for HIV/AIDS by 2020. 80% of known hypertensive and diabetic individuals at the household level maintain "controlled disease status" by 2025</li> <li>• Ensure a relative reduction in the prevalence of current tobacco use by 15% by 2020 and 30% by 2025</li> </ul>

<sup>31</sup> [WHO–2019](#) Note: The data points have been retained from the previous report version (2020)



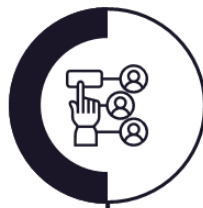
## 4. Key Challenges and Unmet Needs of the Healthcare Market<sup>32, 33</sup>

India's healthcare ecosystem has multi-fold challenges like infrastructure, personnel, technological advancements, affordability, and preventive care. These can be overhauled through government initiatives and public spending via low-cost digital and device solutions using mobile technology and improved data services. These have been summarized below as unmet needs in the Indian healthcare market:

### Unmet needs in the Indian Healthcare Market

#### Lack of Resources

There is a lack of availability of public healthcare services, infrastructure, and professionals across the country. Healthcare workers lack updated knowledge as advanced & innovative healthcare education and training facilities are not imparted at the college level to all students. The Indian medical devices market is highly dependent on foreign suppliers as India is importing 80% of its high-end medical equipment.



01

#### Rising Healthcare Cost

According to a Brookings India report based on NSSO surveys, the cost of healthcare drags about 7% of India's population into poverty each year. Infant care and pre-natal surgical procedures are too costly to be borne by the families in India, which is major cause of high infant mortality rate.

02



#### Healthcare Workforce Shortages

The Indian Journal of Public Health estimates that India will require 2,070,000 doctors by 2030. A doctor in the government hospital attends to ~11,000 patients, which is more than the WHO recommendation of 1:1,000. The report released by MoHFW showed that there is a 7% shortfall of doctors at Primary Health Centers (PHC) and a 57% shortfall of doctors at Community Health Centers (CHC) across rural and urban areas.



03

#### Harnessing Advanced Health Technology

There is low accessibility and usability of intellectual property right (IPR) and technology applications especially imaging, artificial intelligence, etc. at present in healthcare. There is a lack of standardization as currently, there are no established standards for the usage of AI in healthcare settings.

04



#### Lack of quality; discrepancies between rural and urban areas

Over 75% of the healthcare infrastructure is concentrated in metro cities, where only 27% of the total population lives, the rest 73% of the Indian population lack even basic medical facilities. The primary medical centers are lacking over 3,000 doctors and this shortage has increased by ~200% over the past ten years.



05

<sup>32</sup> Quartz India–2018, Health Systems Global–2018, Hindu Business Line–2017, NCBI–2018, India Spend–2019

<sup>33</sup> MoHFW, Springer- 2021, TimesofIndia-2022, TimesofIndia-2022, TimesofIndia-2022, ITA

During the pandemic, the healthcare industry has undergone many changes in the growth and acceptance of technologies. Patients were not aware and well-informed about health programs, which leads to the slow adaptation of digital tools in the healthcare industry. There is a need to increase the participation of patients to enhance their treatment journey and make healthcare more accessible and affordable through telemedicine and remote patient monitoring. On the other side, the data protection laws for the healthcare sector are at a nascent stage in the country, which needs overhauling. Major challenges facing the Indian healthcare market are summarized below:<sup>34</sup>

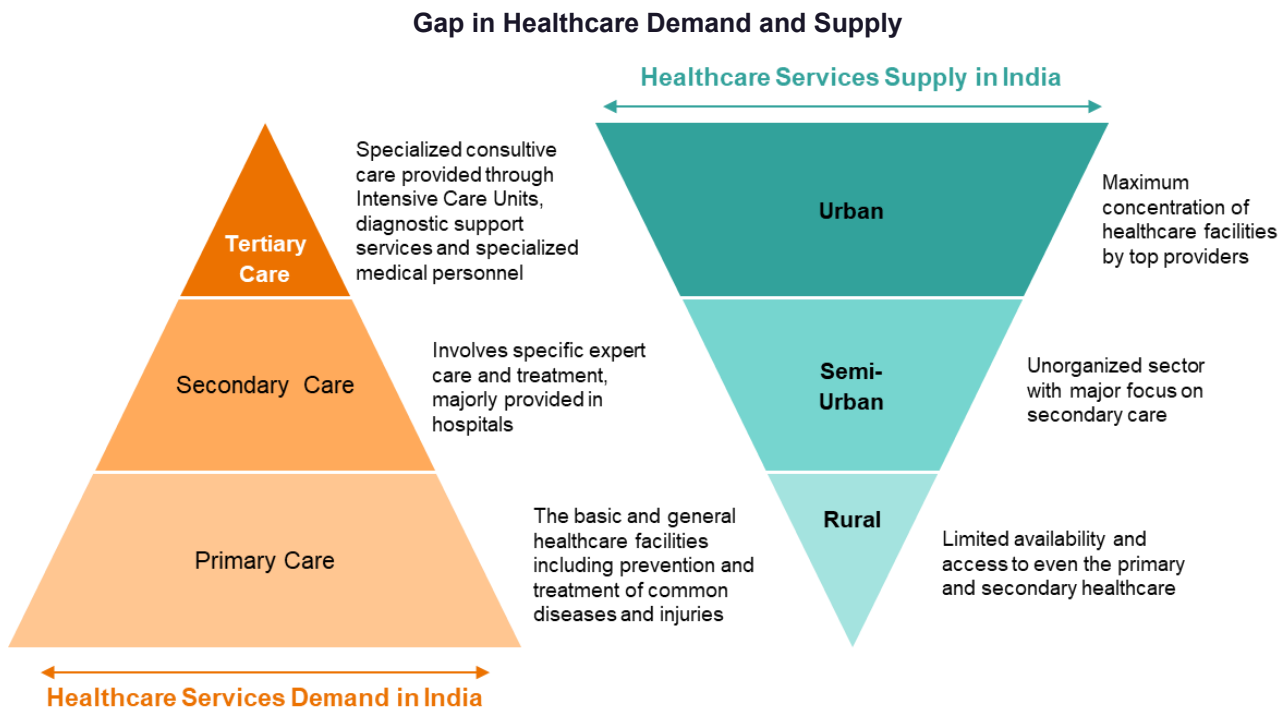
### Major Challenges facing the Indian Healthcare Market



<sup>34</sup> [Prognosis-2022](#), [Economic Times-2022](#), [Economic Times-2022](#)

The challenges in the healthcare market majorly revolve around the lack of affordability, access, and availability. There is a huge mismatch in the demand and supply of healthcare services in India due to numerous factors, such as rural-urban disparity, the importance of the private market, and inadequate public market infrastructure.<sup>35</sup>

Although the public healthcare market has made improvements in the recent past with various new initiatives and schemes to benefit the patients, there is a significant shortfall in primary healthcare centers and community health centers for the population.<sup>36</sup>



**Key Takeaway:** In India, 90% of patients need basic healthcare in form of primary and secondary care while tertiary care is required in special cases only. Unfortunately, the supply of even basic healthcare facilities in rural areas is quite limited. People in these areas are majorly dependent on public healthcare facilities, which as stated above, do not meet the requirement, and lack accommodation, given the government spending and population in these areas. Physical reach is one of the basic determinants of access, defined as “the ability to enter a healthcare facility within 5 km from the place of residence or work” and in the country, 31% of the rural population travels more than 30 km for availing healthcare facilities.<sup>37</sup>

India’s 70% of the population is living in semi-urban and rural areas but 80% of India’s healthcare facilities are in urban areas with the highest existence of top-notch and private healthcare brands<sup>38</sup>. Over 60% of hospitals, 70% of dispensaries, and 80% of well-trained and qualified doctors operate only in urban areas. Rural India accounts for only 37% of the beds available in all government hospitals across the country.<sup>39</sup> The semi-urban consumer segment is unstructured and majorly requires secondary care.

Apart from increasing government spending as well as adding infrastructure and medical professionals to the healthcare system of the country, appropriate technological support is also required. Effective and innovative use of medical technology, has the potential of increasing access,

<sup>35</sup> This data point has been retained from the previous report version (2020)

<sup>36</sup> [Walk Water Talent–2019](#)

<sup>37</sup> [Vinamratech–2018](#)

<sup>38</sup> [WHO–2020](#)

<sup>39</sup> [GovernanceNow-2022](#)

significantly reducing the burden of disease and the load on healthcare delivery services through early diagnosis, better clinical outcomes, less invasive procedures, and shorter recovery times. Also, there is a need to inculcate online health information and online request for appointments to provide more price transparency to patients.

The Healthcare IT market is facing its own set of challenges such as issues related to initial investments, lack of in-house IT expertise, manpower training requirements, reluctance by the staff to change management systems, and lack of confidence in the adoption of newer technologies.<sup>40</sup> With time, there is a rise in startup organizations that can help in improving the Indian healthcare system by digitizing patient records or leveraging data and analytics (including AI/ML) to solve the common challenges faced by the healthcare workforce.<sup>41</sup>

### Impact of COVID-19 on the Indian Healthcare Market<sup>42</sup>

The COVID-19 pandemic crippled the Indian healthcare market severely leaving it in urgent need of financial backing. To address the requirement, the Indian government announced a 137% increase in healthcare expenditure in the 2021 budget. India spent around 1.8% of its GDP on healthcare, which lagged the global average of 6%, but provided a much-needed relief to the sector.<sup>43</sup>

The private healthcare delivery sector has experienced a significant impact on its business operations and financial performance because of COVID-19. With an increased focus on managing the pandemic situation in the past months, the near-term and ongoing health plans have taken a setback. The private healthcare entities were recording a drop of 50%–70%\*\* in revenues during April and May with a drop of ~USD 1,850–3,180 Mn\*\*\* for Q1 FY2021\*\*.<sup>44</sup>

The impact of the situation on different sub-segments of healthcare has been adverse due to varied reasons:

- Medical devices and pharma have been impacted due to breaks in the supply chain. With 85% of pharmaceutical ingredient imports from China, India faced a cut of 10%–15% in pharmaceutical revenue.<sup>45</sup>
- While the health insurance companies see the impact on claims, liquidity, and reserves due to the inclusion of COVID-19 under active policies, diagnostics witnessed an impact on both B2C and B2B businesses.
- The hospitals were the worst hit. Their revenues have seen a downfall due to a dip in OPD and IPD footfall with a high burden of fixed costs which are generally 60–65% of the total costs. The below table shows the financial performance of private hospitals before and after COVID.<sup>46</sup>

Period	Occupancy (April 2020)	Revenue Growth (April 2020)	Revenue Growth (FY2021E)	EBITDA (April 2020)	Annualized EBITDA (FY2021E)
Pre-COVID	75%–80%	5%–8%	5%–8%	12%–18%	12%–18%
Post-COVID	25%–40%	(65)%–(60)%	(30)%–(20)%	(35)%–(30)%	(10)%–5%

Post-COVID numbers were estimated in May 2020

With the easing of restrictions, resumption of postponed elective surgeries, and medical tourism, the healthcare market is expected to get back to normalcy in H2 FY2021. However, the performance during this period will not be sufficient to compensate for the drop in revenues in H1 FY2021. Hence, by the end of FY2021, the healthcare market's full-year drop in revenue is projected to be 15%–20%.<sup>47</sup>

<sup>40</sup> [Knowledge Wharton–2020.](#)

<sup>41</sup> [EconomicTimes-2021](#)

<sup>42</sup> Note: This data point has been retained from the previous report version (2020)

<sup>43</sup> [Economic Times](#)

<sup>44</sup> [Business Standard–April 2020](#)

<sup>45</sup> [Career Anna–June 2020](#)

<sup>46</sup> [Medical Buyer–May 2020](#)

The pandemic tested the resilience of India's healthcare system to deal with an outbreak of such magnitude, which was possible due to the combined efforts of both the public and private sectors. While there were several mistakes to learn from, there were also positives that counted, such as:

- Rise in innovative healthcare startups, which focused on improving patient care services
- Use of online and digital means to increasing access and affordability
- Rise of crowdfunding platforms to raise funds for patients facing medical emergencies<sup>48</sup>

## 5. Key Trends and Evolution in Future

The healthcare market in India is transforming and entering a new phase with increasing patient awareness, tremendous advancement of technology, and a model of operations, especially in the private market. The current challenges, drivers, and trends of the market together are shaping the market's future.<sup>49</sup>

In recent times, the healthcare system has been robust and digital. Despite the many challenges, it has witnessed phenomenal changes and developments, specifically for the health sector shifting towards digital, dependency on telemedicine, and the use of AI/IoT devices. There is a constant evolution of technology to make processes more efficient and enhance patient experiences and outcomes.

India has witnessed a renewed focus on leveraging digital technology during the pandemic. Several schemes were recently launched such as the National Digital Health Mission (NDHM) and teleconsulting guidelines combined with a burgeoning health tech start-up ecosystem to create a better health system. Also due to COVID-19, there has been a significant positive shift in different sub-sectors, including increased government expenditure, policies, changing technology, infrastructure, and workforce to create a universal eco-system.

### 5.1. Current Trends <sup>50</sup>

The trends in the healthcare market in India are a consequence of the market's challenges as well as changing times. The preferences of consumers are changing and moving towards healthier options which are the major determiners of the market's trends.<sup>51, 52</sup>

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<sup>47</sup> [Express Health Care May 2020](#)

<sup>48</sup> [Economic Times](#)

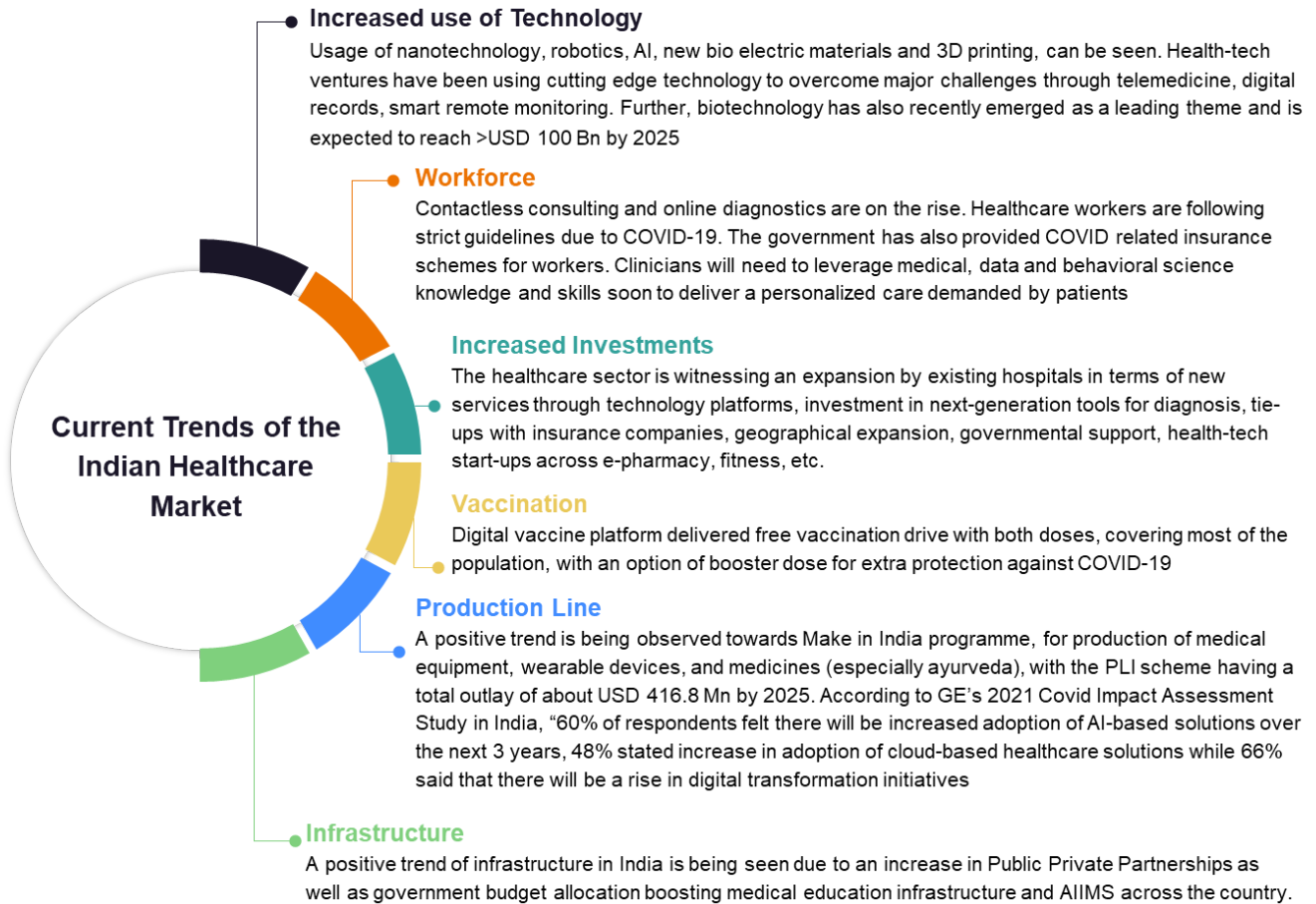
<sup>49</sup> Note: The data points have been retained from the previous report version (2020)

<sup>50</sup> [Express Computer](#), [Economic Times](#), [EY](#)

<sup>51</sup> [Make In India](#)

<sup>52</sup> [Businessline](#)





## 5.2. Market Drivers

Healthcare has continued to evolve, especially around information technology (IT) penetration. Technological innovation and surge in the e-health segment, especially in the post-pandemic scenario. Some of the major drivers of growth and development in the healthcare sector are:<sup>53</sup>

### Forward-looking Policies



The government is extensively working towards making the healthcare sector FDI attractive. Post-pandemic, the government is working towards reducing customs duties and other taxes on medical device equipment.

The government of India's schemes such as Ayushman Bharat Yojana or Pradhan Mantri Jan Arogya Yojana (PMJAY) under the National Health Protection Scheme (NHPS) as well as Pradhan Mantri Bhartiya Janaushadhi Pariyojana, have become the highlights of the market and will continue to drive insurance, spending, and pharma related facilities for the common public.

### Increased use of Technology



The increasing scale of virtual health offerings in India is a significant driver of growth in the healthcare segment. The use of AI and robotics have made healthcare more developed and reachable. The rising penetration of digital technologies such as consumer devices, wearables, and apps, robotic surgery, 3D printing technology, LASIK, IoT, blockchain databases, remote care, and telemedicine in areas with low healthcare quality and doctor availability is meaningfully addressing the challenges of accessibility and coverage in the health sector.

### Health Insurance Penetration

<sup>53</sup> [Express Healthcare](#)



The health insurance market has been growing over the years due to increased health insurance coverage and penetration, especially post-COVID. In 2022, although medical insurance premiums grew by 16%, it accounted for 20% of the non-life insurance business. Increasing healthcare costs, low government spending, increased number of new diseases, and corporate offering of health insurance coverage to employees are the major reasons for the increased penetration.

### Increased Investments



In recent years, increased investment, and expenditure from the public as well as private investors have contributed to the rapid growth of the healthcare market in India. In 2021-22, NRHM allocated USD 10 Bn for enhancing health coverage.

The emergence of reputed global players investing through FDI has played a pivotal role in the growth of the healthcare market. The emergence of reputed global players investing through FDI has played a pivotal role in the growth of the healthcare market.

### Medical Tourism



A Draft National Strategy and Roadmap for Medical and Wellness Tourism is being formulated by the Ministry of Tourism. This initiative is to recognize and achieve the true potential of medical tourism in India. As per health experts, the medical tourism sector is expected to grow by 110%, from USD 5-6 Bn to USD 13 Bn in 2022.<sup>54</sup> In terms of footfall, India is expected to treat more than 3 trillion international patients by 2030.

### Re-emergence of Traditional Medical Care



Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy (AYUSH) are the system of alternative medicines in India and are known as the traditional mode of healthcare. The market's penetration and size are increasing with higher budget allocation, increased number of doctors and centers, and increased investments and FDIs. Large brands such as Apollo, VLCC, and Manipal Group are also setting up wellness centers across India, with traditional healthcare remedies. The market has a wide range of offerings from healthcare to beauty and personal care products making it accessible to larger consumer groups.

## 5.3. Technology<sup>55</sup>

Technology infusion in India is on its way to improving healthcare accessibility and affordability. India's medical technology market is forecasted to reach USD 50 Bn by 2025.<sup>56</sup>

India is leading in the adoption of digital health technology with 76% of healthcare professionals in the country already using Digital Health Records (DHRs) in their practice. The shift has been possible due to the government's enthusiasm and initiatives related to innovation and locally made technology - both at the central and local level, support for public-private partnerships, and rapid internet penetration to meet the requirements for efficient delivery of digital solutions.<sup>57</sup>

The government's push for use of electronic medical records by healthcare providers is enabling artificial intelligence (AI) to make patient data insightful and helpful in delivering better treatment. The medical expertise is reaching underserved rural markets through telemedicine and teleconsulting programs made possible with expanding telecom bandwidths. Currently, the use of technology is concentrated and majorly limited to top private players only. With a rapid shift, there is a large scope and opportunity for India to increase the reachability of technology in healthcare.<sup>58</sup>

Figure below shows how different technologies can help build a complete technology-driven healthcare system in India:

<sup>54</sup> [ET 2022](#)

<sup>55</sup> [India Health Exhibition-2020](#)

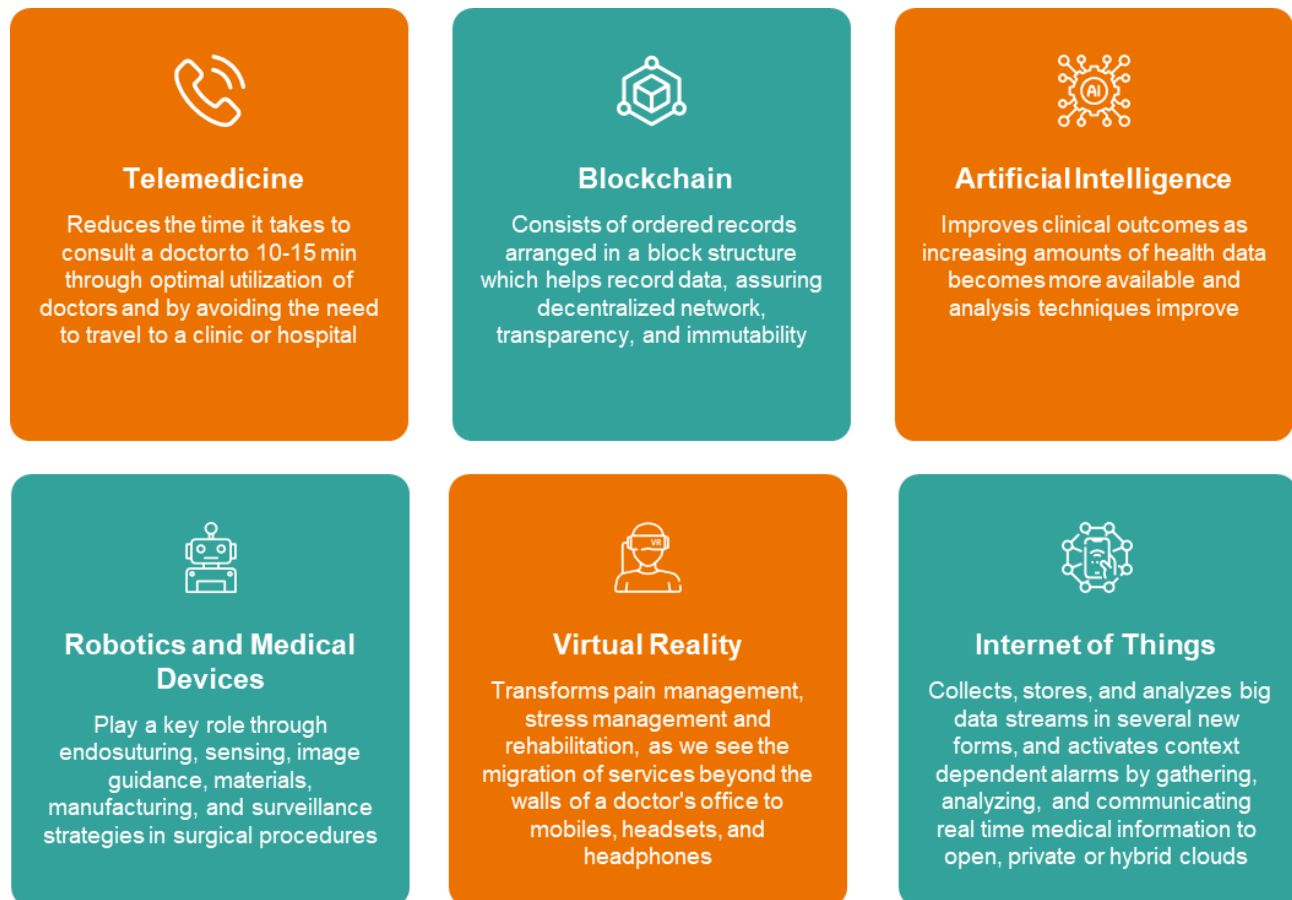
<sup>56</sup> [IBEF](#)

<sup>57</sup> Note: The data points have been retained from the previous report version (2020)

<sup>58</sup> Note: The data points have been retained from the previous report version (2020)



## Technological Opportunities for the Future<sup>59</sup>



### 5.3.1. Telemedicine<sup>60</sup>

Telemedicine is the use of technology to provide remote healthcare services as the entire process of diagnosis and treatment happens primarily using audio, video, or texting. The technology increases both accessibilities as well as affordability. Telemedicine in India is at an initial expansion stage, though the use of the technology has increased since the pandemic hit the country.<sup>61</sup>

Kerala government's initiative for the e-Sanjeevani app and other startups like PharmEasy, Tata 1mg, Practo, Netmeds, and Lybrate are some of the key providers of telemedical consultation in India.

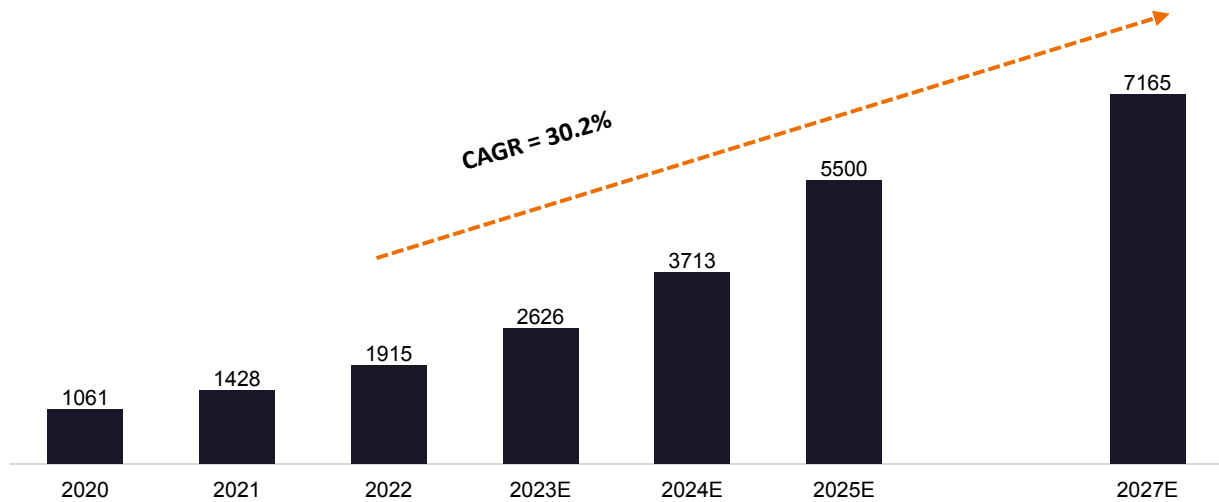
The telemedicine market in India is expected to reach USD 5.5 Bn by 2025 growing at a CAGR of 30.2% during 2022-2027.<sup>62</sup>

<sup>59</sup> Note: The data points have been retained from the previous report version (2020)

<sup>60</sup> [Economic Times](#), [Express Healthcare](#), [IBEF 2022](#)

<sup>61</sup> Note: The data points have been retained from the previous report version (2020)

<sup>62</sup> [IMarc](#)

**Outlook -****Telemedicine Market Size in India, 2020-2027E (USD Mn)**

Source: [Startup Talky](#), [Statista](#), [TOI](#), [IMarc](#)

**Initiative by the Public Private Players<sup>63</sup>**

- American Tower Corporation (ATC) CSR Foundation India and the Apollo Telemedicine Networking Foundation (ATNF) have collaborated to open five digital dispensaries in rural Madhya Pradesh.
- In 2022, the Meghalaya government and Gurugram-based drone start-up, TechEagle entered a partnership to develop a method that can save lives by facilitating the rapid delivery of medicines to remote areas of the state.
- World Health partners, in collaboration with private and NGO resources have set up telemedicine centers in rural areas to enable providers to earn income by connecting patients with doctors in cities.

<sup>63</sup> [WeForum](#), [BW Disrupt](#), [ITU](#)

### Use Cases of Telemedicine in India<sup>64</sup>

- According to the Union Budget 2022–2023 announcement, the National Tele Mental Health Program's true objective is "to provide access to quality mental health counseling and care services".
- The launch of the National Health Digital Mission has created prominence across all e-platforms, and this has been made possible with integrated support with telemedicine, a unique health ID, electronic health, and medical data.
- e-Eye Kendram is a project between Apollo Hospitals and the Government of Andhra Pradesh launched in 2018 to provide ophthalmology screening, diagnosis, and consultations to the public residing in Mandal-level localities across the state.
- Jharkhand has tied up with Apollo Hospitals Enterprises Ltd. for telemedicine services, to create digital dispensaries for the local people

### 5.3.2. Blockchain<sup>65</sup>

The blockchain technology collects data in real-time, stores it on multiple servers to make it hack-resistant, allows access to authorized people only, and stores a newer version every time the file is accessed. Hence the three major and defining features of blockchain are a decentralized network, transparency, and immutability.

Blockchain in India is being looked at to optimize and increase the efficiency of the already implemented electronic health record (EHR). It can be used for standardization and interoperability of data used by EHRs. Blockchain can contain references to the EHR data, while Smart Contracts will define and enforce access rules to EHR content. This will ensure that only authorized persons/entities access the EHR data. This has been brought to the forefront because of the pandemic in India, as the Government of India launched National Digital Health Mission (NDHM) 'to digitize healthcare records across the country.

On the blockchain ecosystem, every patient will have a unique identity over the blockchain network, and his clinical data generated at various stages will be stored with his unique identity as EHR digital asset on the blockchain network. This unalterable data would be accessible to the necessary parties involved.<sup>66</sup>

### India self-regulating Pharmaceutical Drugs Supply Chain Using Blockchain Technology

Recently, NITI Aayog organized the initiative to leverage blockchain technology for a unified data system in the pharmaceutical drugs supply chain with a host of partners in the healthcare and technology domain.

Using blockchain, manufacturers and other supply chain participants can gain real-time data access and greater visibility throughout the supply chain, starting from the point of manufacture to the point of sale. The priority is for the supply chain in the pharma industry, bringing higher transparency into this intricate supply chain management as it records data in blocks, duplicating and then distributing them on the network on computer systems on the blockchain. It ensures enhanced security by installing a secure QR code, which will practically eliminate fake and spurious products and unwanted interference.

<sup>64</sup> [ET](#), [Forbes](#), [Apollo Telehealth](#), [Hindustan Times](#)

<sup>65</sup> [Forbes India–2020](#), [NITI Aayog–2020](#), [MEITY.GOV](#), [Express Pharma](#)

<sup>66</sup> Note: The above data points from this point have been retained from the previous report version (2020), for this section

Currently, India is making attempts to implement a foolproof track-and-trace system in the pharma value chain, despite mounting cases of spurious or substandard drugs denting its image as the pharmacy of the world.

### National Blockchain Framework

Within the next 5 years, the government is planning to properly execute this framework in the healthcare sector, which would be developed with core research and linking real-life applications with intermediate milestones consisting of the basic framework for the reference implementation, integration with various existing infrastructure and services. A multi-institutional collaborative approach (involving Government, academia, industry, R&D labs, etc.) would be adopted for this purpose. The basic outcome would deal with electronic health records.

### 5.3.3. Artificial Intelligence (AI)<sup>67</sup>

AI enables healthcare services such as automated analysis of medical tests, predictive healthcare diagnosis, and automation of healthcare diagnosis with the help of monitoring equipment, and wearable sensor-based medical devices. AI enables body scanning 150 times faster than the traditional method of human radiologists. It provides an effective and robust system to detect acute neurological events in ~ 1.2 seconds, hence enabling on-the-spot availability of test results to avoid wait time of patients and doctors for getting the results and reports.<sup>68</sup>

The Indian healthcare market will continue to reform with the increased adoption of AI. It is predicted that the applications of AI in the healthcare market will be worth ~USD 11.78 Bn by 2025<sup>26</sup> with an expected CAGR of 50.9% for 2019-2025.

The capability of AI applications:

- Radiologist to general population ratio is 1:100,000 in India. There is a huge backlog of imaging that needs to be assessed by doctors – which leads to late diagnosis and diseases spreading and becoming dangerous; hence AI in radiology will help to bridge this gap.
- AI-enabled healthcare services can be delivered at lower costs with increased efficiency and an emphasis on diagnostics. Moreover, artificial intelligence enables hospitals to implement patient-centric plans and eliminate unnecessary hospital procedures, making delivery of healthcare services faster in India.
- Limited availability of skilled personnel is there in the sector and AI can provide with Virtual reality-based solution to teach surgeons new procedures and determine their level of competency.

AI can be used in all sub-segments of healthcare and is currently being used for the following functions, in India:

- Medical Imaging and Telepathology
- ECG Testing and Emergency Management
- Genetic Testing
- EHR Data Search and Summarization
- Management of medical records
- Automated analysis of medical tests

<sup>67</sup> [Stpi, Times of India](#)

<sup>26</sup> [weforum](#)

<sup>68</sup> Note: The above data points have been retained from the previous report version (2020)

- Predictive healthcare diagnosis
- Automation of healthcare diagnosis

Latest Government initiatives for encouraging the use of AI in healthcare in India:

- The United States-India AI initiative - Launched by Indo-US Science & Technology Forum (IUSSTF) aiming to help teams of innovators and entrepreneurs from India and the US, whose products will improve the quality of healthcare, by utilizing the power of AI and to identify new opportunities in the sector
- INAI applied research center - A collaboration between the Government of Telangana, IIIT-H, Public Health Foundation of India & Intel India, to focus on solving challenges in India's healthcare and smart mobility segment
- Ministry of corporate affairs portal 3.0 - MCA launched an updated version of its portal, version 3.0, MCA 2, which will leverage data analytics, and AI/ML, to simplify regulatory filings for companies. It will help to leverage AI for compiling, grouping, and categorizing comments/inputs received from stakeholders which will help to create analytical reports for quick policy decision making

#### 5.3.4. Robotics and Medical devices<sup>69</sup>

Robotics play a key role in Endosuturing, sensing, image guidance, materials, manufacturing, and surveillance strategies in surgical procedures. Surgical robotics focus on providing very precise treatment in the best timeframe possible.

The Indian robotic-assisted surgical market is expected to reach USD 316.841 Mn by 2024, growing at a CAGR of 19.8%

Apart from witnessing an increase, such as instances of robots being used for laparoscopic surgery and automated pharma and robot nurses (upcoming trend), robotics has been heavily adopted and is expected to continue growing with the familiarization and adoption.

Few of the cases that witnessed the use of robotics during COVID-19 healthcare:<sup>70</sup>

- Deployment of a robot to deliver food and medicines to COVID-19 patients in isolation wards.
- The interactive humanoid robot deployed at AIIMS stands 92 cm tall, has cameras and sensors to detect obstacles, and can monitor and interact with patients. The second robot deployed at AIIMS can disinfect floor surfaces using sodium hypochlorite solution. Both robots can move autonomously and operate without human intervention.
- The robot at Fortis asks questions using face and speech recognition and takes temperature readings through thermal scanners. After screening and clearing a person, it issues a pass to enter. If it detects a higher body temperature, an alert will be sent to the doctors, and the patient can directly consult the Fortis doctor through the robot screen.

Fast-growing developments that will further shape the healthcare robotics industry:

1. **Nanorobots set to dominate:** With a microscopic virus holding humanity to ransom, the near future will surely see a proliferation of nanoscale robots that will traverse through the body to detect anomalies and irregularities. While the technology around nanoparticles is still developing, nanotechnology is a field that has the potential to revolutionize the future of healthcare and medicines.

<sup>69</sup> [Fortune India](#), [Live mint](#), [Invest India](#), [Business Today](#), [Mantra labs](#)

<sup>70</sup> Note: The data points have been retained from the previous report version (2020), for the use of robotics in COVID-19

2. **Popularity of ‘rehabilitation robots’:** With longevity on the rise and an expanded base of senior citizens in all large economies, the development of innovative rehabilitation robots is set to boom. Such robots will support an aging population grappling with physical disabilities and support patients using integrated sensors.
3. **Surgical robotic systems:** This is expected to be particularly relevant to hospitals that offer surgical procedures for complicated conditions. Moreover, with the enhancement of surgical systems being a pertinent need, it will drive the market for robotic services. Low-cost innovations that assist robotic surgeries are expected to dominate the Indian market

## Medical Devices

The Indian Government has identified medical devices as a priority sector for the flagship 'Make in India' program and is committed to strengthening the manufacturing ecosystem. India is the fourth largest medical device market in Asia. Currently, the Indian market has a high reliance on imports but in recent times the exports have seen a surge. The '**Atma Nirbhar**' Bharat mission is providing an impetus to India's vision of becoming a global manufacturing hub for medical devices.

The Indian medical devices industry is expected to reach USD 50 Bn by 2030 with a CAGR of 28%.

Recent Initiatives:

- **Production Linked Incentive Scheme:** It proposes a financial incentive to boost domestic manufacturing and attract large investments in medical devices segments such as cancer care devices, radiology and imaging devices, anesthetics devices, implants, etc.
- **Promotion of Medical Devices Parks Scheme:** It aims to enhance India's manufacturing capabilities by increasing investment and production in the pharmaceutical and medical devices sectors and contributing to product diversification to high-value goods in the sectors

Also, wearable technology has become increasingly popular amongst urban populations for health and wellness tracking. Patient monitoring for chronic illness as well as post-op care has become easier for healthcare professionals through IoT devices and wearables, and such devices are being used by Manipal Hospital which began using a remote monitoring service linked to Google's Fitbit devices

### 5.3.5. Virtual Reality (VR)<sup>71</sup>

The healthcare market employs virtual reality throughout its various markets to offer a higher quality of care and efficiency to patients and medical professionals. VR is useful in the entire value chain of healthcare as well as education of medical students.

- For doctors: it helps in analyzing injuries
- For medical students: it enables learning firsthand medical procedures through virtual training
- For patients: it provides methods to quicken patient recovery in new and innovative ways; VR has been proven useful in pain management, therapies, and cognitive rehabilitation.

Medical practitioners, drug makers and hospitals in the country are increasingly using VR and augmented reality (AR) technologies to help in therapy, surgery, marketing and spreading medical awareness, with the help of technology providers such as Loop Reality, InceptionX, Health Connect Digital, and Imagine Labs:

- During **cancer treatment**, VR pain therapy is done by wearing VR goggles and watching calming videos, which reduce the pain.

<sup>71</sup> [ET Bureau–2017](#), [Silicon India–2020](#), [Economic Times](#)

- **Pharmaceutical companies** use VR for marketing their medicines through “experiential marketing” tool. For instance, a major drug maker collaborated with InceptionX to create a virtual reality vertigo attack experience.
- **Hospitals and medical institutions** use VR surgical training for doctors and students across the country. In February 2017, Global Hospitals, Hyderabad organized the first-ever live VR surgical training for 700 doctors and students where they wore VR headsets and witnessed laparoscopy surgery performed by top urologists in the country.<sup>72</sup>

A Med-tech company named as MediSim VR, working in the field of healthcare simulation, has set up India’s first fully automated Virtual Reality (VR) lab in the Puducherry Institute of Medical Sciences for MBBS students to enhance their key medical skills and train them for the future.

### 5.3.6. Internet of Things (IoT)<sup>73</sup>

IoT in healthcare is being used to track the progression and treatment of diseases, monitor patients’ health conditions, and accordingly alter their medication levels, track medicines usage data to ensure adherence to treatment plans, and provide real-time information on symptoms.

IoT has wide usage across the healthcare system:<sup>74</sup>

- For doctors and hospitals, it cuts costs through real-time access to patient data and improves workflows via sensor-based smart chips and real-time location systems
- For health insurance companies, it reduces claim payments
- For pharmaceutical companies, it allows patients to begin medications on time due to early detection of illness and track and ensure compliance with treatments
- For the government, it monitors and sustains population health

Currently, there are few IoT-enabled healthcare devices in India. However, the below examples throw light on how IoT is a focus of med-tech and biotech startups in the country and has resulted in successful clinical trials.

- The IoT-enabled Keyar developed by Janitri Innovations is a non-invasive cardiotocography (CTG) device that can monitor the heart rate of a baby in the mother’s womb and track uterine contractions of a pregnant woman. It is a portable, non-invasive, easy-to-use device and runs on ordinary batteries. It is a replacement for the traditional, tough-to-afford, bulky equipment and hence can be used in remote areas as well.
- AJO (Anemia, Jaundice, and Oxygen saturation) by EzeRx, is a non-invasive, IoT-enabled device that evaluates for anemia, liver, and lung-related medical problems without any blood tests and less than USD 0.01 (INR 1). It is a user-friendly device and can be operated without any medical knowledge or expertise. The test result can be transferred by email or text message within 0.5 to 1 second of test completion.<sup>75</sup>
- Recently, MedTel Healthcare, founded by a group of Odia entrepreneurs, has collaborated with EzeRx startup to develop, and promote the use of non-invasive Internet of Medical Things (IoMT) for heart, diabetes, renal, dental, liver, eye conditions, and lungs, by developing zero blood-based kits.

IoT has a unique standpoint with its far-reaching benefits and the patient-centric approach has the potential to revolutionize the Indian healthcare sector. But to achieve maximum results, **support**

<sup>72</sup> Note: The above data points from this point have been retained from the previous report version (2020), for this section

<sup>73</sup> [Yourstory–2019](#), [Economic Times–2017](#), [Startuptalky](#), [Live Mint](#), [New Indian Express](#)

<sup>74</sup> [Optum](#)

<sup>75</sup> Note: The above data points from this point have been retained from the previous report version (2020), for this section



**infrastructures should be strengthened.** This all includes a low cost of IoT-enabled devices, internet availability and reliability, a strong IT framework, data security and privacy, and a seamless user experience

#### **Outlook –**

IoT holds significant market potential in the fields of e-health services and telemedicine. Healthcare providers and fitness well-being startups are using IoT to remotely monitor patients and minimize disease risk by enhancing health grounds.

Wearable devices are being used for real-time data, such as fitness trackers and health devices can enable quality living by monitoring health conditions like blood pressure, blood sugar levels, heart rate, etc. The devices are being used for recording patient data such as heart rate, oxygen saturation level, sleep quality, steps, and pain score. The data is then shared with nurses and doctors over an online monitoring solution.

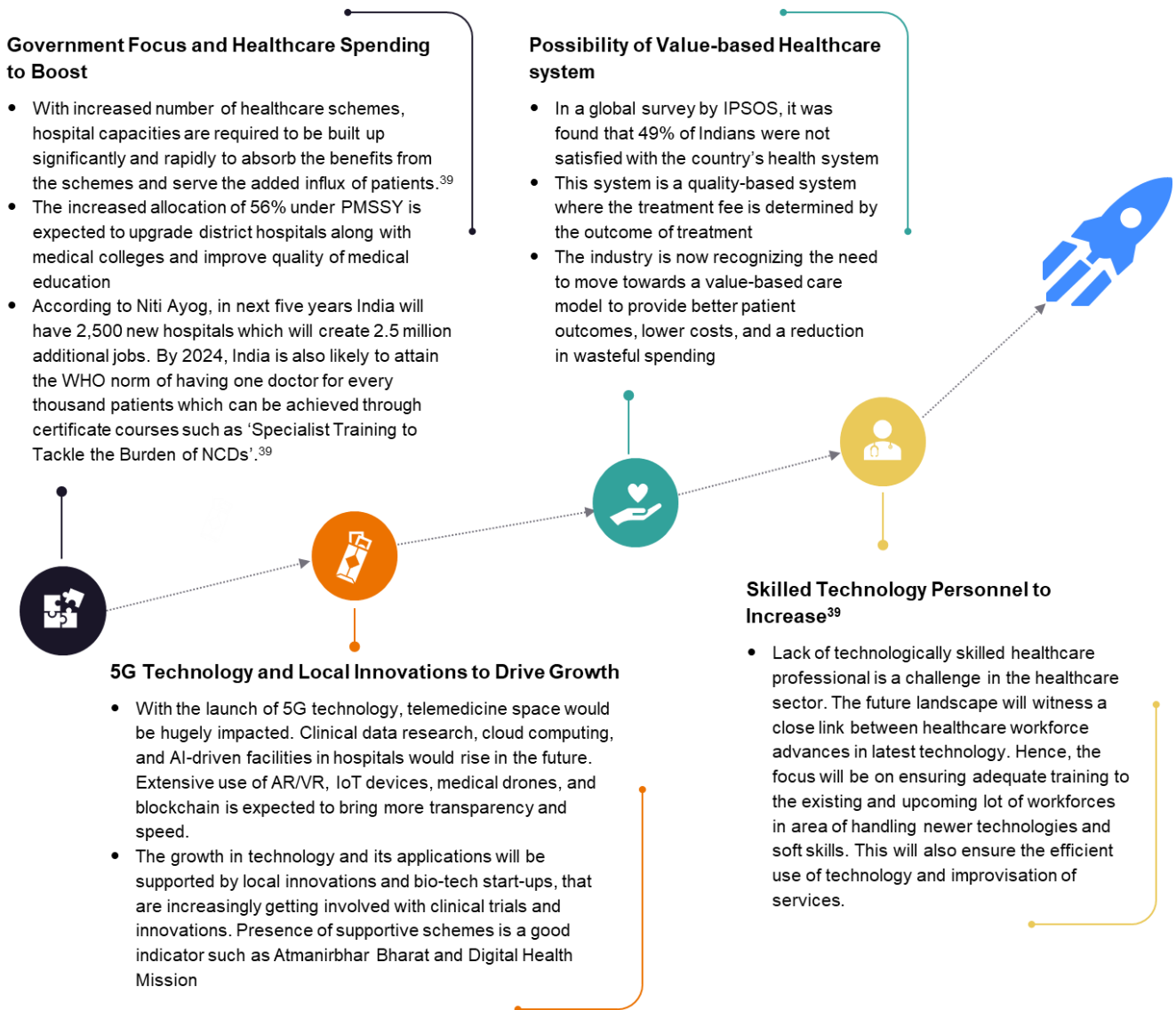
#### **5.4. Future Vision<sup>76</sup>**

The future of healthcare in India sees solutions to the existing challenges and inhibitors with increased spending and focus from the government along with increased technological applications, innovations, and support.<sup>77</sup>

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<sup>76</sup> [Classic Informatics–2020, Knowledge Wharton–2020, Economic times, KPMG, Economic Times](#)

<sup>77</sup> *Note: The data points have been retained from the previous report version (2020)*



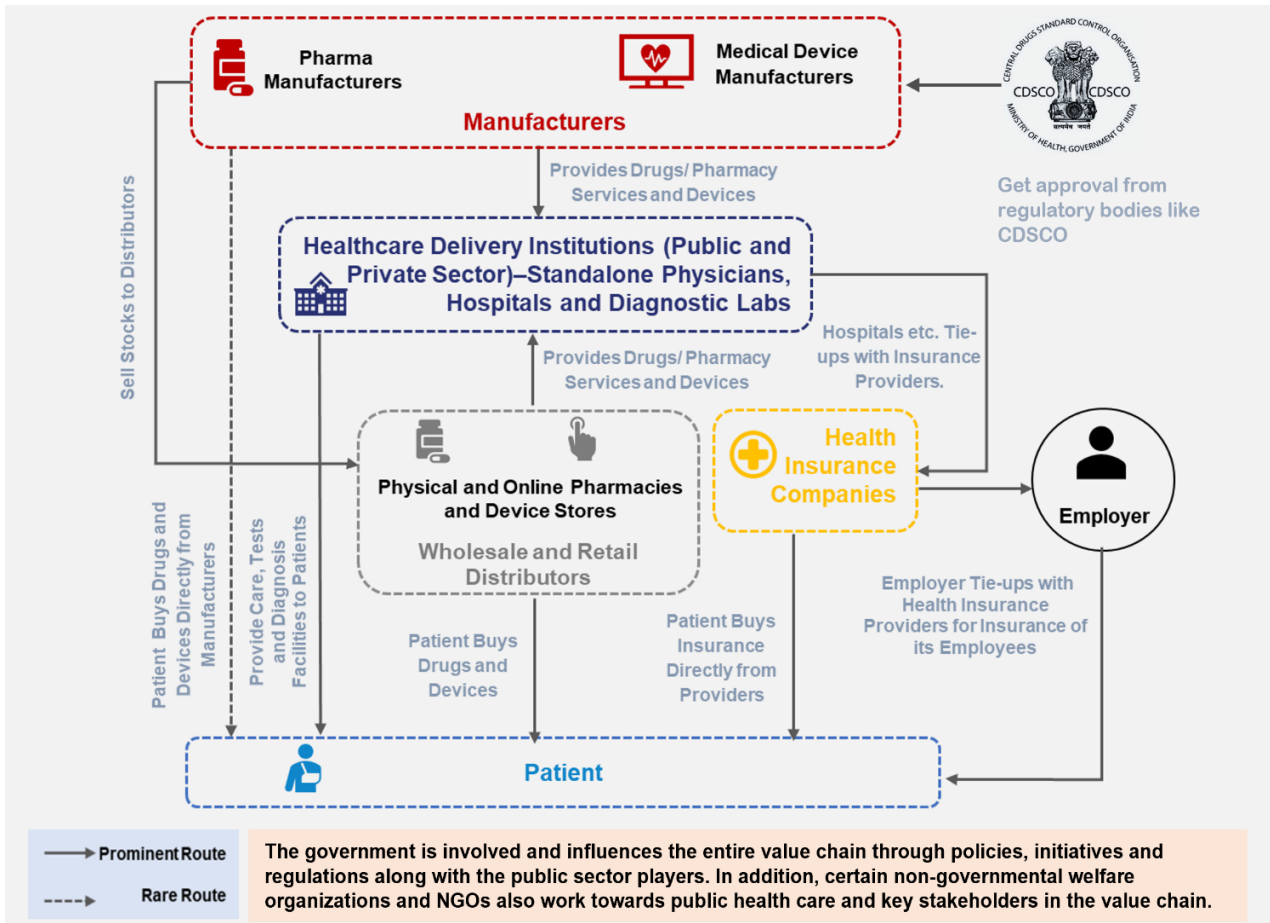
## 6. Healthcare Primary Stakeholder Value Chain in India

There are six major types of stakeholders involved in the Indian healthcare value chain:

- **Manufacturers** of pharmaceuticals and medical devices sell their products to healthcare institutions. These manufacturers sell the manufactured stock to several types of wholesale and retail distributors. Patients also, in some cases, buy drugs and devices directly from these manufacturers.
- **Regulatory Bodies:**<sup>78</sup> These are independent healthcare bodies established by the government to set standards in a specific field of activity, or operations and then enforce those standards. Central Drugs Standard Control Organization (CDSCO) is one of the important regulatory bodies in the healthcare sector in India.
- **Healthcare Delivery Institutions** such as hospitals, physicians, and diagnostic labs provide healthcare and diagnosis facilities, respectively, to the patients.
- **Wholesale and Retail Distributors** of drugs and devices sell them to patients and healthcare institutions after buying the stock from the respective manufacturers.

<sup>78</sup> [CDSCO](#)

- **Health Insurance Companies** tie-up with hospitals and other healthcare providers for selling their insurance to the end customers. They also tie up with **employers** to provide insurance facilities to their employees. Also, they sell insurance to patients directly.
- **Patients** are the end stakeholders of the healthcare value chain. As the primary determiner of the healthcare product demand as well as key users of healthcare technology, they drive the market growth and determine the trends and future of the market. They buy services and products from the above-listed stakeholders.





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## 8. Appendix<sup>79</sup>

With less healthcare investment and spending in India, the pandemic outbreak has put the healthcare system to the test demanding massive upgrades, which looks unlikely in the short- to medium-term.

Due to the pandemic, the market has witnessed increased use and awareness of technology, telemedicine, and training of primary health workers, and mobile hospitals. Also, under the current situation, near-term and ongoing plans are expected to see a major realignment as the current focus remains on managing the pandemic.

Private market healthcare has seemed to suffer the most during this situation. The sharp drop in out-patient footfalls, diagnostic testing, and elective surgeries have adversely impacted the cash flows along with the impact on Medical Value Travel (MVT), due to lower international patients.

The impact of the pandemic on various sub-markets of healthcare has been described below:

### Hospitals<sup>80</sup>

- The hospitals are facing a double burden – reduced cashflows due to a dip in OPD and IPD footfalls as well as increased investment in additional manpower, equipment, consumables, and other resources as preparedness for the safety and eventual treatment of patients. With the dip in overall revenues, and fixed costs remaining constant, EBITDA for these hospitals have been at an all-time low and will take a few more months to come back to the pre-COVID level.
- Changes are being made to doctor-engagement models by moving doctors to fully variable models based on the revenue they generate.

### Medical Devices<sup>81</sup>

- India imports consumables, disposables, and equipment including orthopedic implants, gloves, syringes, bandages, computed tomography, and magnetic resonance imaging devices from China. Due to the current situation, medical device manufacturers across India are finding it difficult to source important raw materials and electronic components from Chinese factories.

### Pharmaceuticals<sup>82</sup>

- Pharma market has also suffered due to breaks in the supply chain. Increased raw material prices, limited supply, disrupted production schedules, the shutdown of factories, and high shipping costs are the major factors impacting the market. The Indian pharma market faces additional impact due to high raw material procurement dependency on China.
- Manufacturers of generic drugs were unable to launch products or conduct clinical trials as well due to restrictions amid lockdowns.

### Diagnostics<sup>83</sup>

- Due to the pandemic, both B2B and B2C businesses of diagnostics have been impacted. Though now, the diagnostics chain labs have shown a strong recovery, the non-COVID revenues are yet to come to the last years or pre-COVID levels.
- The labs testing for COVID-19 diagnostics have partially made up for the revenue gap of such labs. However, the margins made on COVID-19 tests are significantly lower. At the same time,

<sup>79</sup> [Economic Times](#), [India Med Today](#)

<sup>80</sup> [Medical Buyer](#)

<sup>81</sup> [Economic Times](#), [India Med Today](#)

<sup>82</sup> [The Pharma Letter](#)

<sup>83</sup> [Live Mint](#)

COVID associated costs are quite high. Hence, while the overall revenues are progressively becoming better, the higher costs due to COVID-19, and the lower regular non-COVID business are putting tremendous financial strain to sustain fixed costs and operations.

### **Health Insurance<sup>84</sup>**

Health insurance companies are facing various challenges and are foreseeing an impact in the following areas:

- **Claim pay out and liquidity**

As instructed by IRDAI, insurers are to accept COVID-19 related claims under active health insurance policies. However, the risk of COVID-19 is not currently priced under active products, and hence, these claims are expected to cause an additional burden on the books of insurers if treated outside government hospitals.

Also, given the country-wide business disruption owing to the pandemic, the IRDAI has advised insurance companies to extend the grace or delay period by 30 days in case of policy lapse or renewal. This might pose some immediate liquidity challenges for insurance companies.

- **Product development**

With rising concern and awareness about health after the pandemic hit, inquiries about health insurance policies have increased by 30%–40%. The pandemic also provides an opportunity for insurance companies to innovate and serve the evolving needs of a more informed population. Several insurance companies have launched COVID-19 insurance products in March 2020.

- **Reserves requirement**

In wake of the pandemic, the government has taken actions toward reducing bond interest and repo rates, which will create challenges for insurers in terms of maintaining higher reserves, liquidity risk, and credit risk. Hence, the regulator may have to provide some temporary relaxation on the reserving requirement for insurers, especially for those with close margins to solvency.

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<sup>84</sup> [Economic Times](#)