Market Intelligence & Analytics

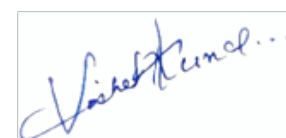# Assessment of the diagnostics industry in India

October 2024

Consulting

Market Intelligence & Analytics

CRISIL
An S&P Global Company

Contents

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1 Macroeconomic assessment

1.1 A review of India's Gross Domestic Product (GDP) growth

India's Gross Domestic Product (GDP) grew at 5.9% Compounded Annual Growth Rate (CAGR) between FY12 and FY24

India's GDP grew at 5.9% Compounded Annual Growth Rate (CAGR) between FY12 and FY24 to Rs 173.8 trillion in FY24. A large part of the lower growth rate was because of challenges heaped by the Covid-19 pandemic in FY20 and FY21. In FY22, the economy recovered with abating of the pandemic and subsequent easing of restrictions and resumption in economic activity.

In FY23, GDP rose 7% on continued strong growth momentum, propelled by investments and private consumption. In fact, the share of investments in GDP was at 33.3% and that of private consumption was at 58.0%.

For FY24, The National Statistics Office (NSO) estimated India's real GDP growth to be at 8.2% in its Provisional Estimates (PE), compared to its earlier projection of 7.6%. Analysis of the FY24 year's growth reveal notable dichotomies. Growth has primarily been fuelled by fixed investments, exhibiting a robust 9% expansion, while private consumption growth lagged behind at 4%, trailing overall GDP growth. On the supply side, the industry sector experienced the most substantial growth at 9.9%, while the agriculture and Electricity, Gas, Water Supply & Other Utility services sectors exhibited more modest growth rates of 1.4% and 7.5%, respectively. These trends underscore the varied performance across sectors, highlighting the nuanced dynamics shaping India's economic landscape in FY24.

Real Gross Domestic Product (GDP) growth in India (new series) – constant prices
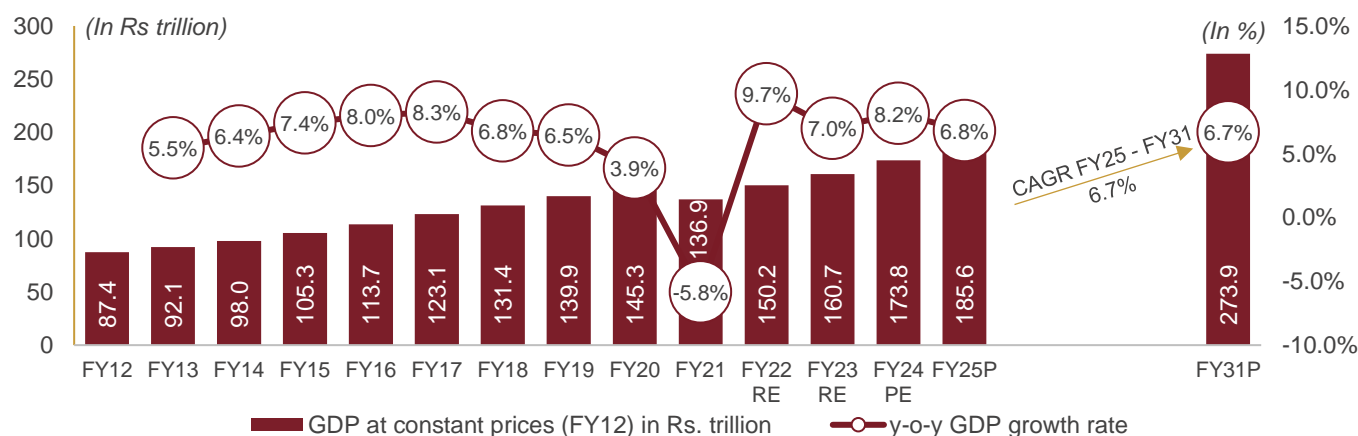
Notes: PE: provisional estimates, RE: revised estimates, P: projected

The values are reported by the government under various stages of estimates

Actuals, estimates and projected data of GDP are provided in the bar graph

Source: Provisional estimates of national income 2022-2023 and quarterly estimates of GDP for the fourth quarter of fiscal 2023, Central Statistics Office (CSO), Ministry of Statistics and Programme Implementation (MoSPI), CRISIL MI&A

Between FY25 and FY31, India's growth seen averaging ~6.7%

Between FY25 and FY31, CRISIL expects India to sustain average GDP growth of ~6.7%, which will make it the third-largest economy in the world.

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FY31 will be when India becomes, according to World Bank definition, an upper middle-income country with per capita income rising to ~$4,500.

Some of the key drivers of this growth is:

- Capital Investments will play a significant part in this growth, With an increasing share of private sector investments and government focus on fiscal consolidation
- The manufacturing sector is expected to grow at a faster rate than in the past decade between FY11 till FY20 with an estimated growth of 9.1% between FY25 and FY31
- The services sector will remain the dominant driver, contributing to 55.5% share in GDP by FY31
- Strong demand will play an important role in bolstering the manufacturing sector's growth compensating for a relatively tepid global growth and restrictive trade environment.

Private Final Consumption Expenditure (PFCE) to maintain dominant share in Gross Domestic Product (GDP)

Private final consumption expenditure (PFCE) at constant prices clocked 6% CAGR between FY12 and FY23, maintaining its dominant share of 58.0% in FY23 (~Rs 93,238.3 billion in absolute terms, up 6.8% on-year). Growth was led by healthy monsoon, wage revisions due to the implementation of the Seventh Central Pay Commission's (CPC) recommendations, benign interest rates, growing middle age population and low inflation. As of FY24, PFCE is estimated to have further increased to Rs 96,992.1 billion, registering a y-o-y growth of ~4% and forming ~56% of India's GDP.

PFCE (at constant prices)
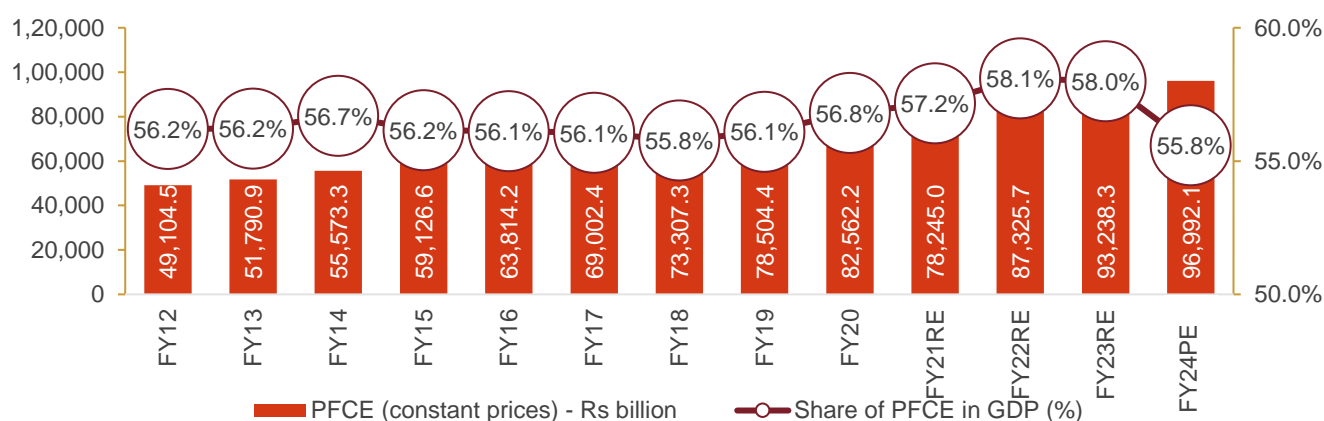
Note: RE: Revised estimates; PE: Provisional estimates
Source: MoSPI, CRISIL MI&A

India saw robust growth in per capita income between FY12 and FY23

India's per capita income, a broad indicator of living standards, rose to Rs 99,404 in FY23 from Rs 63,462 in FY12, i.e., 4.2% CAGR. Growth was led by better job opportunities, propped up by overall economic growth. Moreover, population growth was stable at ~1% CAGR. Also, as per the provisional estimates, per capita net national income (constant prices) was estimated to have increased to Rs 106,744, thereby registering an on-year growth of ~7.4%.

With per capita income rising to upper middle-income category by FY31, the share of PFCE is expected to be dominant in India's GDP growth.

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Per capita net national income at constant (2011-12) prices

	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21RE	FY22RE	FY23RE	FY24PE
Per-capita NNI (Rs)	63,462	65,538	68,572	72,805	77,659	83,003	87,586	92,133	94,270	86,054	94,054	99,404	106,744
Y-o-Y growth (%)		3.3	4.6	6.2	6.7	6.9	5.5	5.2	2.3	-8.7	9.3	5.7	7.4

RE – revised estimates, PE – Provisional estimates of NNI, NNI – net national income
*Source: Provisional Estimates of Annual National Income, 2022-23, CSO, MoSPI, CRISIL MI&A*

Decline in poverty indicating rise in middle- and high-income population in India will support consumption growth

The proportion of poor in India (defined as households living at or below Rs 125,000 per annum) declined from ~16% to ~14% between FY16 and FY21, according to the ICE 360° survey by the People Research on India's Consumer Economy (PRICE).

Conversely, the proportion of middle- and high-income groups in the country increased to ~86% in FY21 from ~85% in FY16. Their proportion is expected to reach ~95% by FY31. The middle-income group formed ~82% of the total population in FY21. A positive economic outlook and growth across key employment-generating sectors (such as real estate, infrastructure and automotives) are expected to have a cascading effect on the overall per-capita income of the population in the medium-to-long term. This, in turn, is expected to drive consumption expenditure and discretionary spending.

Income-based split of the population

% share

■ Low income ■ Middle income ■ High income
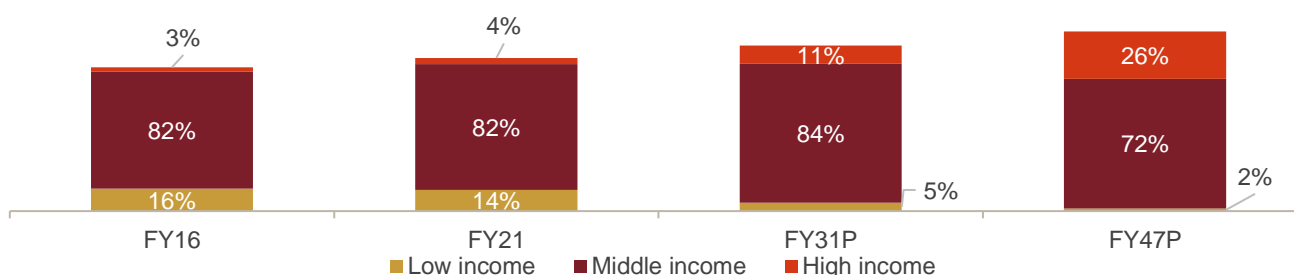
Note:
Percentages may not add up to 100 due to rounding off decimals
E: Estimated; P: Projected
Low-income group: Defined as households earning less than Rs 125,000 per annum
Middle-income group: Defined as households earning between Rs 125,000 and Rs 3 million per annum
High-income group: Defined as households earning more than Rs 3 million per annum
*Source: PRICE ICE 360° survey, CRISIL MI&A*

Population to clock 0.8% Compounded Annual Growth Rate (CAGR) between 2020 and 2030

According to Census 2011, India's population grew to ~1.2 billion at 1.9% CAGR during CY01-CY11. The estimated number of households stood at ~246 million.

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According to the United Nations (UN) World Population Prospects 2022, the country's population is expected clock 0.8% CAGR between 2020 and 2030 to reach 1.5 billion. The UN has estimated that with 1.425 billion people, the country surpassed China to become the most populous country in April 2023.

India's population growth
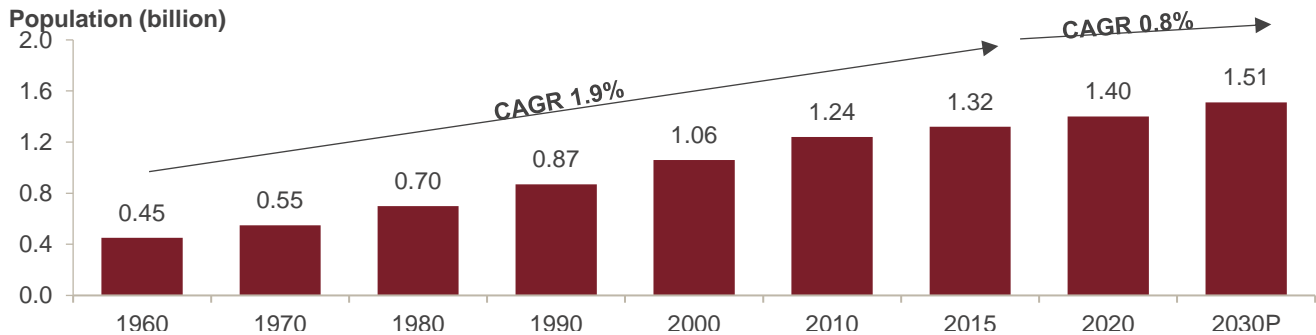
Note: P: Projected

Source: UN Department of Economic and Social Affairs, World Population Prospects 2022, CRISIL MI&A

Urbanisation likely to reach 40% by 2030

India's urban population has been increasing over the years. The trend is expected to continue as economic growth increases. From ~31% of the total population in 2010, the country's urban population is projected to reach nearly 40% by 2030, according to a UN report on urbanisation. People from rural areas move to cities for better job opportunities, education and quality of life. Typically, migration can be of the entire family or a few individuals (generally an earning member or students).

India's urban population versus rural
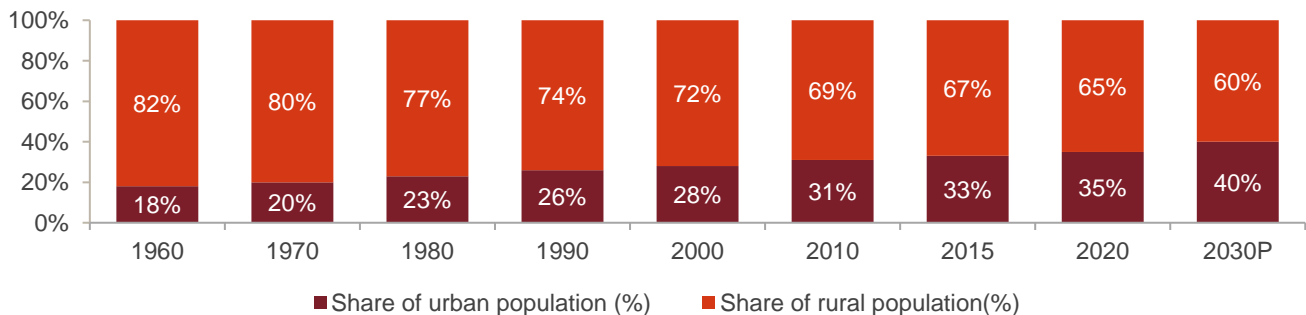
Note: P: Projected

Source: World Urbanization Prospects: The 2018 Revision, UN, CRISIL MI&A

1.2 State-wise macroeconomic indicators

West Bengal among the top six states in terms of Gross State Domestic Product (GSDP) in FY23

In FY23, Maharashtra Gujarat, Tamil Nadu, Karnataka, Uttar Pradesh and West Bengal were the top six ranking states in terms of gross state domestic product (GSDP) at constant prices.

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State-wise GSDP and per capita NSDP at constant prices as of FY23
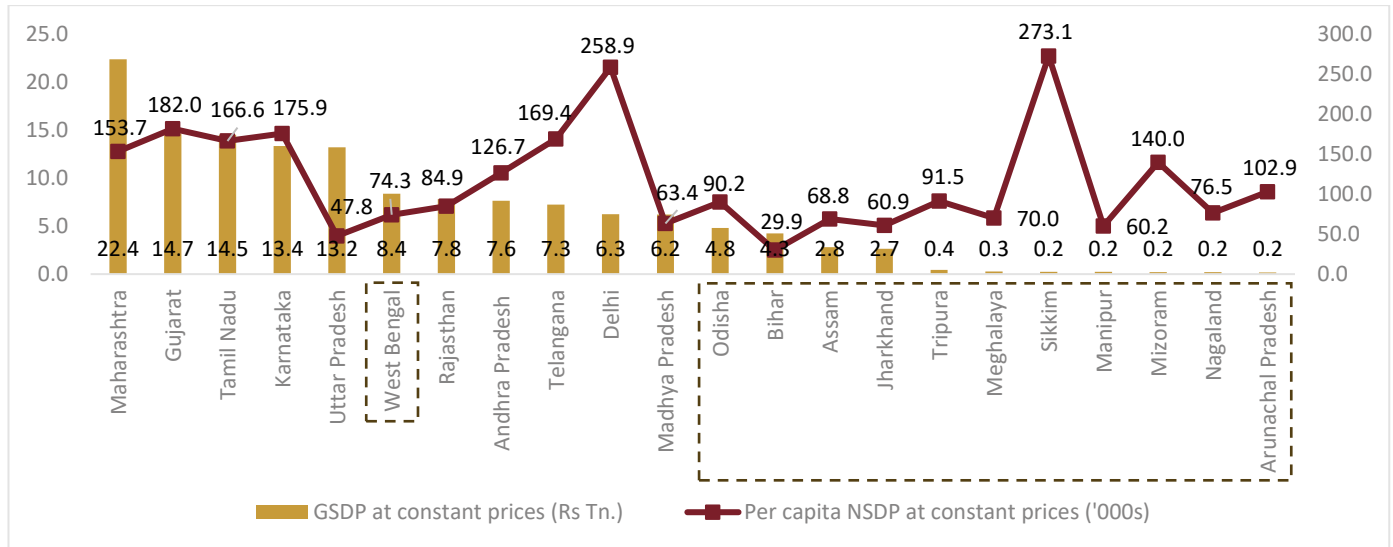
Note: Dotted box represents select eastern states
Source: MOSPI, CRISIL MI&A

West Bengal among the top five states in terms of Gross State Domestic Product (GSDP) in FY24 among the states for which data is available

In FY24, Maharashtra, Tamil Nadu, Uttar Pradesh, Karnataka and West Bengal were top five states in terms of gross state domestic product (GSDP) at constant prices. However, in terms of per-capita net state domestic product (NSDP) at constant prices, Sikkim and Delhi led the peer states in FY24. West Bengal, Odisha, Bihar, Assam and Jharkhand are the top five states in the east and north-east region contributing to majority of the region's gross domestic product. However, FY24 data for states like Gujarat, Manipur, Arunachal Pradesh, Mizoram and Nagaland was not available.

State-wise GSDP and per capita NSDP at constant prices as of FY24
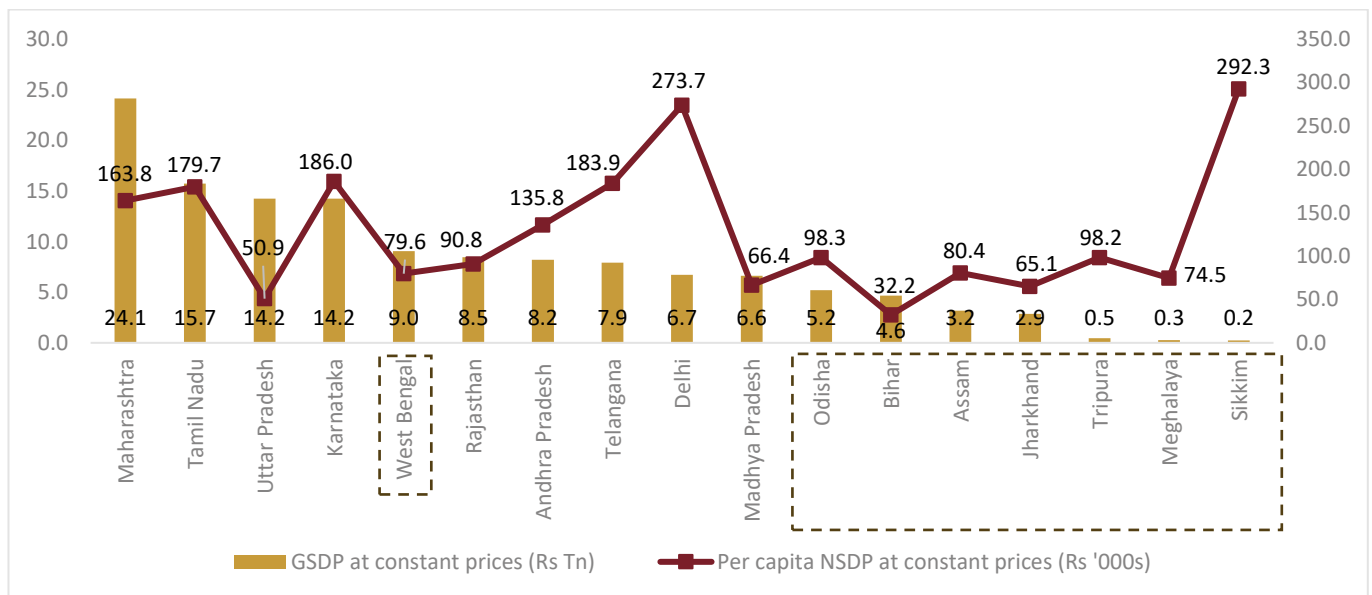
Note: Dotted box represents select eastern states

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Top three fastest growing states in FY23 were from East including Northeast India

In FY23, among the states considered, Mizoram, Manipur, Nagaland, Bihar and Maharashtra have grown the fastest at 14.2%, 11.4%, 10.2%, 9.8% and 9.4% respectively.

GSDP (constant) growth across states in FY23 (%)

State	Growth (%)
Mizoram	14.2
Manipur	11.4
Nagaland	10.2
Bihar	9.8
Maharashtra	9.4
Uttar Pradesh	9.0
Assam	8.9
Telangana	8.4
Tripura	8.2
Tamil Nadu	8.1
Karnataka	8.1
Sikkim	8.0
Haryana	7.9
Delhi	7.9
Jharkhand	7.8
Rajasthan	7.8
Meghalaya	7.7
Chhattisgarh	7.7
Uttarakhand	7.6
Gujarat	7.4
Himachal Pradesh	6.9
West Bengal	6.7
Madhya Pradesh	6.6
Punjab	6.3
Odisha	6.1
Andhra Pradesh	5.8
Kerala	4.2
Goa	2.4
Arunachal Pradesh	1.1

Median: 7.8%

Note:

The dotted line represents the median for the set of states

Source: MOSPI, CRISIL MI&A

6 out of the top 10 fastest growing states were in East including Northeast India in FY24

In FY24, Assam, Telangana, Bihar, Tripura and Sikkim have grown the fastest among other states in India. Among the states showing the fastest growth in FY24, 6 out of the top 10 states were from the east including northeast region with Assam growing the fastest at 13.3%.

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GSDP (constant) growth across states in FY24 (%)

State	Value
Assam	13.3
Telangana	9.2
Bihar	9.2
Tripura	8.6
Sikkim	8.5
Odisha	8.4
Tamil Nadu	8.2
Rajasthan	8.0
Haryana	8.0
West Bengal	7.7
Uttarakhand	7.6
Maharashtra	7.6
Jharkhand	7.5
Uttar Pradesh	7.5
Delhi	7.4
Andhra Pradesh	7.4
Himachal Pradesh	7.1
Punjab	6.6
Karnataka	6.6
Chhattisgarh	6.6
Kerala	6.5
Madhya Pradesh	6.0
Meghalaya	5.8
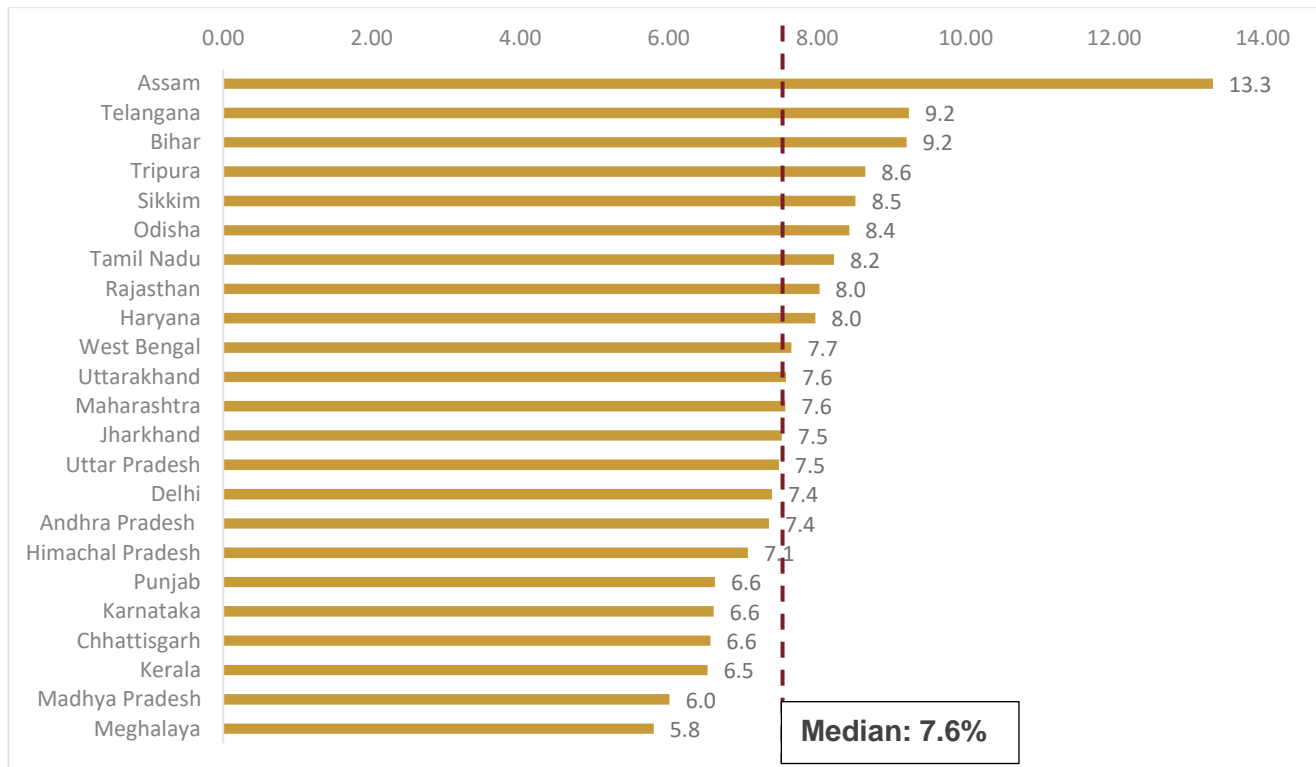
Median: 7.6%

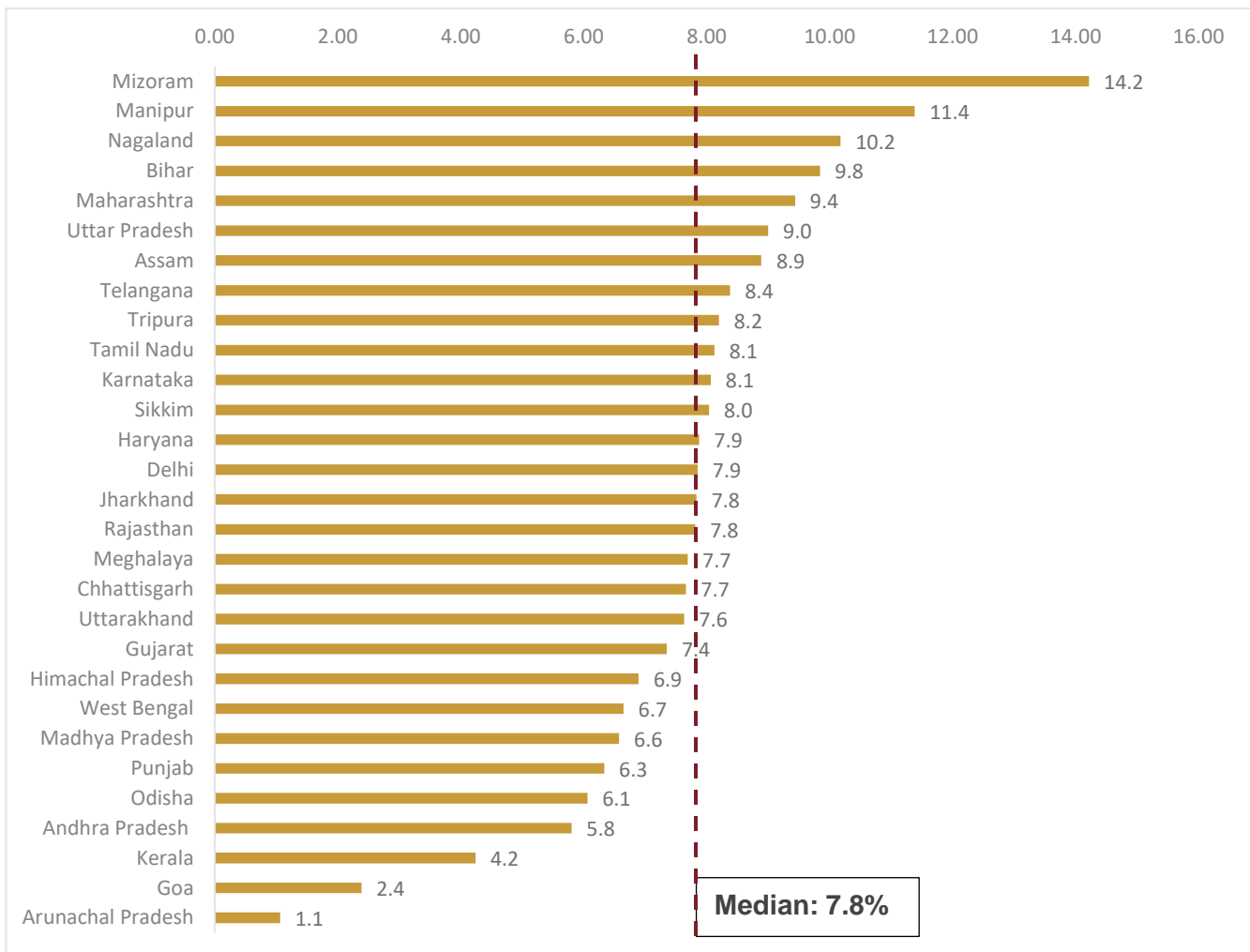*Note: The dotted line represents the median for the set of states*

Latest data has been considered. Among the states under consideration, FY24 data for Gujarat, Manipur, Arunachal Pradesh, Mizoram and Nagaland was not available

Source: MOSPI, CRISIL MI&A

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Overview of Gross Domestic Product (GDP) of east and north-east states

East and North-East states contributed to ~17.2% of India's GDP in FY23

The gross domestic state product of this region (East and North-east) has grown at a CAGR of 4.3% as against 3.4% growth in India's GDP from FY20 to FY23.

In FY23, Mizoram saw a rise of 14.1% in GSDP on-year basis, while Manipur and Nagaland saw a growth of 11.5% and 10.4% repectively in FY23. India's GDP is estimated to have grown 7.3% in FY23 on-year basis

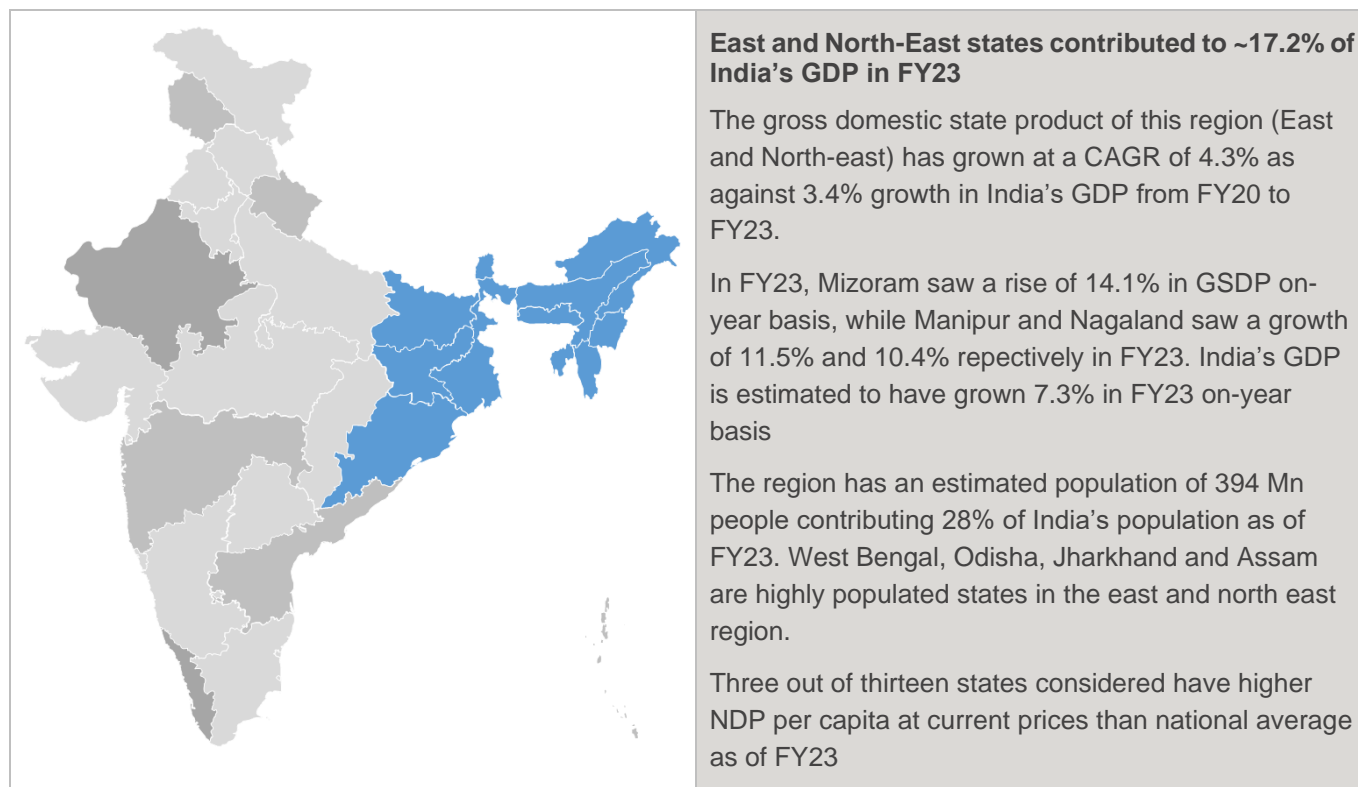The region has an estimated population of 394 Mn people contributing 28% of India's population as of FY23. West Bengal, Odisha, Jharkhand and Assam are highly populated states in the east and north east region.

Three out of thirteen states considered have higher NDP per capita at current prices than national average as of FY23

Note: East: Bihar, Jharkhand, Odisha, West Bengal, Chhattisgarh; Northeast: Sikkim, Arunachal Pradesh, Assam, Tripura, Mizoram, Nagaland, Manipur, Meghalaya
Source: Ministry of Statistics Programme and Implementation (MOSPI), CRISIL MI&A

Sikkim, Mizoram and Arunachal Pradesh are among the top three states in terms of per capita Net State Domestic Product (NSDP) in FY23 in the East including Northeast region

In terms of per capita income, states such as Sikkim, Mizoram and Arunachal Pradesh are the top three states in the east and north-east region as of FY23. The three states have higher per capita income (current prices) as compared to the national average per capita income as of FY23, which is Rs. 1,69,496. Mizoram, Tripura and Sikkim have seen fastest growth in per capita income between FY12 and FY23 in the east and north-east region. The economies of Mizoram, Tripura, Sikkim and Arunachal Pradesh is largely driven by its service sector which contributed ~70% ,44%, 51% and 60% of the GVA respectively in FY23.The services sector consists of Electricity, gas, water supply & other utility services, Trade, repair, hotels and restaurants, Transport, storage, communication & services related to broadcasting, Financial services, Real estate, ownership of dwelling & professional services, Public administration and Other services.

In FY23, Sikkim, Mizoram and Arunachal Pradesh were the top three states in terms of per capita income (Constant Prices) in the east and north-east region. However from FY12 to FY23, Mizoram, Tripura and Odisha have seen fastest growth in per capita income in the east and north-east region growing at a CAGR of 8.4%, 6.2% and 5.8% respectively.

From FY21 to FY24, West Bengal's SGDP at constant prices grew from Rs. 7,040 billion in FY21 to Rs. 9,041 billion in FY24 growing at a CAGR of 8.7% which is more than India's growth rate of 8.3% during the same period.

From FY21 to FY24, Odisha registered the highest CAGR growth of 10.2% followed by Jharkhand, West Bengal and Assam at 9.1%, 8.7% and 8.7% respectively among the states for which data is available

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The East including Northeast region grew at a CAGR of 4.3% from FY20 to FY23 which is more than India's CAGR growth rate of 3.4% during the same period.
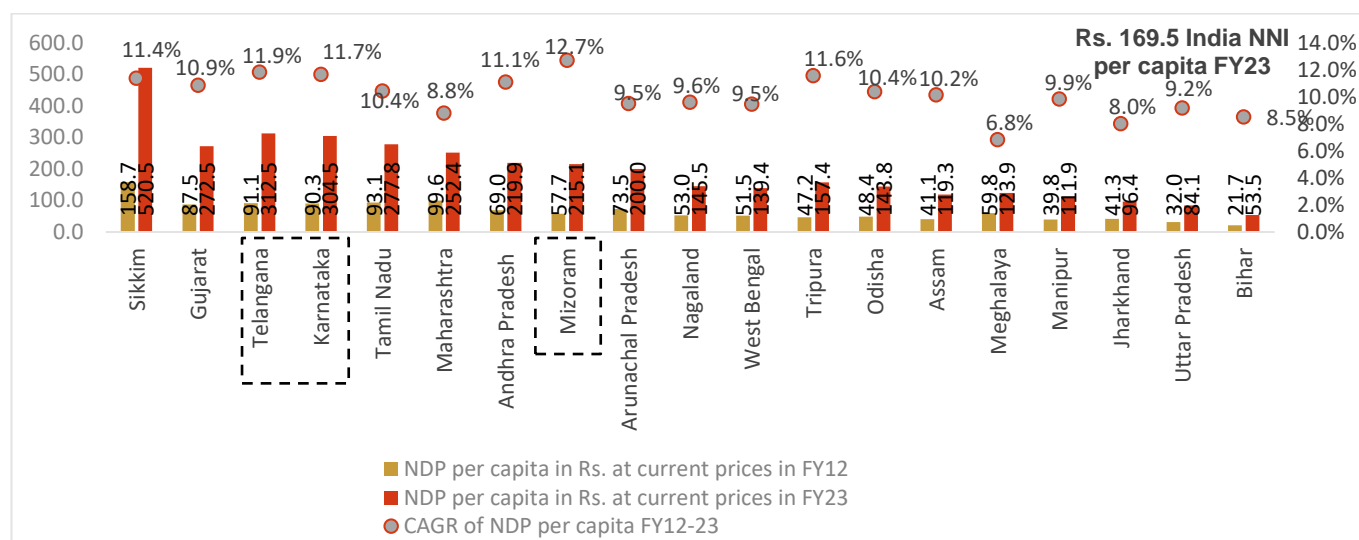
State gross domestic product for select states in Rs Billion at constant prices

States	FY20	FY21	FY22	FY23	FY24	FY20-23 CAGR	FY21-24 CAGR
West Bengal	7,618	7,040	7,874	8,398	9,041	3.3%	8.7%
Bihar	3,983	3,690	3,873	4,254	4,645	2.2%	8.0%
Odisha	3,975	3,891	4,529	4,804	5,209	6.5%	10.2%
Chhattisgarh	2,515	2,512	2,806	3,021	3,219	6.3%	8.6%
Assam	2,407	2,478	2,581	2,811	3,186	5.3%	8.7%
Jharkhand	2,318	2,195	2,459	2,651	2,851	4.6%	9.1%
Tripura	381	364	395	428	465	4.0%	8.5%
Meghalaya	249	230	249	268	283	2.4%	7.2%
Sikkim	195	196	212	229	249	5.6%	8.3%
Manipur	192	181	200	223	NA	5.1%	NA
Arunachal Pradesh	191	184	186	188	NA	-0.6%	NA
Nagaland	185	177	183	202	NA	2.9%	NA
Mizoram	179	164	177	202	NA	4.1%	NA
East including Northeast region	24,388	23,301	25,724	27,678	NA	4.3%	NA
India	1,45,346	1,36,949	1,50,218	1,60,714	1,73,817	3.4%	8.3%

Note: NA: not available

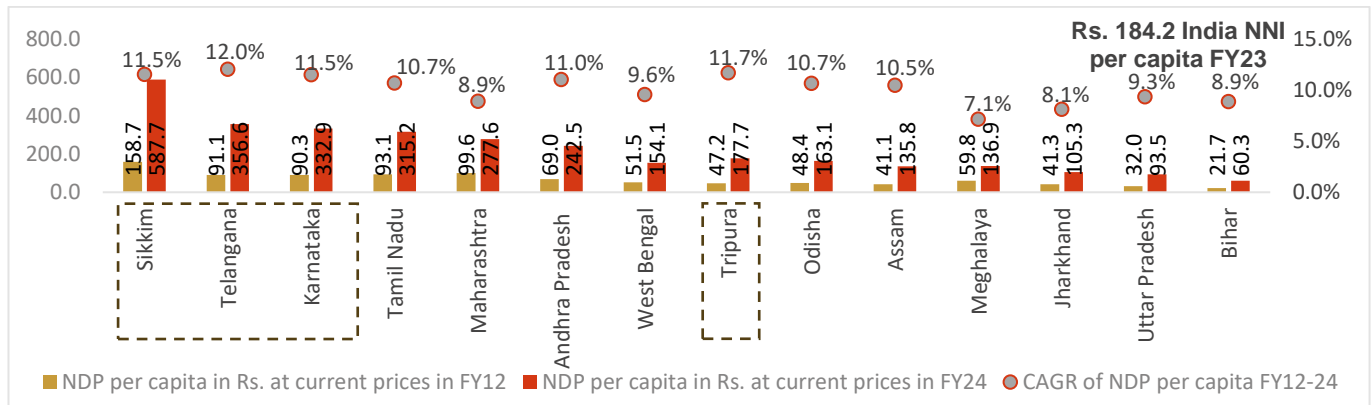*Source: Ministry of Statistics Programme and Implementation (MOSPI), CRISIL MI&A*

**State net domestic product (S-NDP) per capita for selected states (in Rs '000) – FY12 vs FY23**

Note: Top three states with highest CAGR are highlighted

Source: Ministry of Statistics Programme and Implementation (MOSPI), CRISIL MI&A

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State net domestic product (S-NDP) per capita for selected states (in Rs '000) – FY12 vs FY24

Note: FY24 data for Gujarat, Mizoram, Arunachal Pradesh, Nagaland and Manipur was not available

Top four states with highest CAGR are highlighted

Source: Ministry of Statistics Programme and Implementation (MOSPI), CRISIL MI&A

Region wise net domestic product (NDP) ('000) per capita at current prices (FY23)
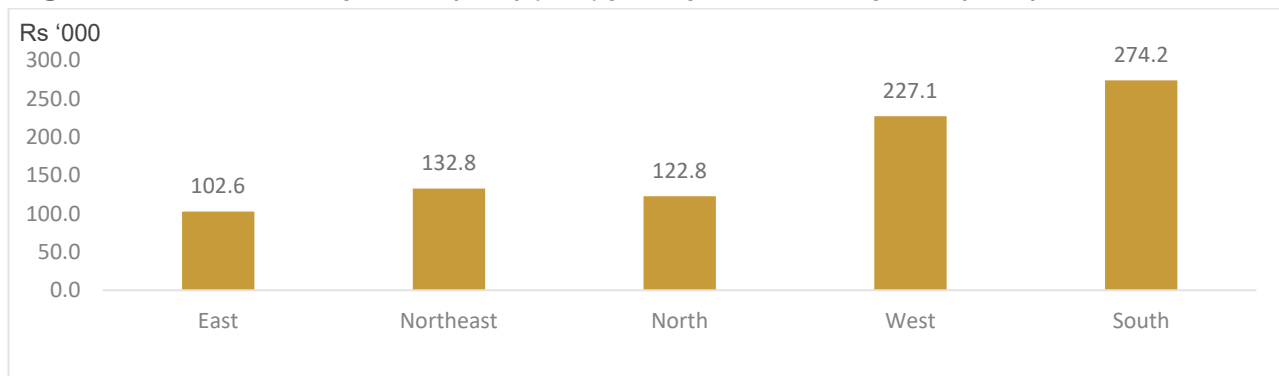
Note: States considered for classification include: East: Bihar, Jharkhand, Odisha, West Bengal, Chhattisgarh; Northeast: Sikkim, Arunachal Pradesh, Assam, Tripura, Mizoram, Nagaland, Manipur, Meghalaya; North: Punjab, Uttarakhand, Uttar Pradesh, Haryana, Madhya Pradesh; West: Maharashtra, Gujarat, Rajasthan; South: Andhra Pradesh, Karnataka, Tamil Nadu, Kerala, Telangana

Source: Ministry of Statistics Programme and Implementation (MOSPI), UIDAI, CRISIL MI&A

Mizoram, Tripura and Kerala lead in terms of better health parameters, higher focus on healthcare spending

As per the scale used, 1 indicates the highest rank and 28 the lowest. The scatter plots that follow juxtapose the latest available rankings on each of these metrics from independent sources (X-axis) with our rankings based on the states' spending towards healthcare as a percentage of its total spending (Y-axis).

Mizoram, Tripura and Kerala fare as the leading states in India in terms of both better health parameters as well as higher focus on healthcare spending. Sikkim also falls in the quadrant of better health parameters. It is ranked 12th, based on NITI Aayog's Health Index report. North-east states of Meghalaya, Arunachal Pradesh and Manipur fall under the category of poor current health infrastructure but focusing on higher healthcare spending to boost the health infra, based on NITI Aayog's Health Index report.

In terms of healthcare expenditure compared to overall expenditure of the states as per FY24 budgets, Northeastern state of Meghalaya ranked 1st, while Manipur ranked 7th.

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Meghalaya and West Bengal among the states to see highest jump in healthcare budget for FY25 compared to FY17 budget; Assam and Jharkhand too, see a considerable jump

The Government of Meghalaya has increased its health budget to ~Rs. 19,710 million in FY25, an increase of ~164.73% compared to FY17 budgeted figures.

West Bengal's budget for Health and Family Welfare has been increased to Rs. 200,530.0 million in FY25.

State	FY 25 Health and Family Welfare Budget (Rs. Million)	FY24 Health and Family Welfare Budget (Rs. Million)	Increase over FY17 budgeted (%)	Avg. spend on health care as a ratio to aggregate expenditure (2017-22)	Key provisions under Health & Family Welfare budget
West Bengal	200,530	184,900	138.46%	5.6	1. Urban health services- allopathy has been allocated Rs 71,090 million. 2. Rural health services- allopathy has been allocated Rs 23,030 million
Odisha***	NA	159,330	233.89%	5.9	1. Rs 30,030 million has been allocated towards Mukhya Mantri Swasthya Seva Mission. 2. Rs 23,800 million has been towards the Biju Swasthya Kalyan Yojana.
Bihar	144,880	167,040	89.22%	5.5	1. Rs 36,200 million has been allocated towards National Health Mission
Assam	83,990	75,060	111.42%	6.4	1. Rs 37,820 million has been allocated for Rural Health Services – Allopathy. 2. Rs 11,A570 million has been allocated for medical education, training, and research.
Jharkhand	72,320	70,500	133.49%	5.2	1. Rs 17,790 million has been allocated towards the National Health Mission.
Meghalaya	19,710	18,050	164.73%	8.2	1. Rs 2,480 million allocated for Self-help Group (SHG) program
Manipur***	NA	19,200	223.02%**	5.7	1. Rs 400 million allocated for 'Chief Minister's Hakshelgi Tengbang' scheme
Tripura***	NA	16,710	147.06%	6.1	1. Rs 300 million allocated for strengthening basic health care infrastructure and Rs. 550 million for the construction of separate centre for communicable Diseases
Arunachal Pradesh***	NA	15,000	34.04%	5.8	1. Rs 90 million allocated for Asha workers and Rs 200 million for upgradation of healthcare centres
Mizoram	8,400	7,510	90.93%	5.9	1. Rs 1,050 million has been budgeted to build public health centres in rural areas
India	**906,590**	**891,550**	**135.60%**	**5.3**	

Note: NA: Not Available

*Limited data was available for Nagaland and Sikkim from their state budget documents; **FY18 data used*

****Data for Odisha, Arunachal Pradesh, Manipur, Tripura has been considered for FY24 due to unavailability of FY25 data.*

Source: State Budgets, CRISIL MI&A

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1.3 Disease profile in India

Eastern India states together recorded one of the highest number of Non-Communicable Diseases (NCDs) in CY21

As per the National Health Profile 2022, out of 59,100,228 patients who attended NCD clinics in CY21, 5.9% were diagnosed with diabetes, 7.6% with hypertension, 2.5% with both diabetes and hypertension, 0.3% with cardiovascular ailments, 0.1% with stroke, and 0.2% with common cancers. Out of the 29 states compared, Rajasthan, West Bengal, and Uttar Pradesh topped the number of persons diagnosed with NCDs out of those screened in CY21 whereas Mizoram, Nagaland and Sikkim were at the bottom. East India states recorded 31,13,517 cases in CY21 while North-eastern states recorded 1,86,233 cases in CY21, which are relatively high considering the population of these states. The above statistics indicate that the eastern and northeastern states require considerable healthcare services and the infrastructure and the demand for healthcare is also forecasted to go up.

State-wise number of persons diagnosed with NCDs in CY21 ('000)
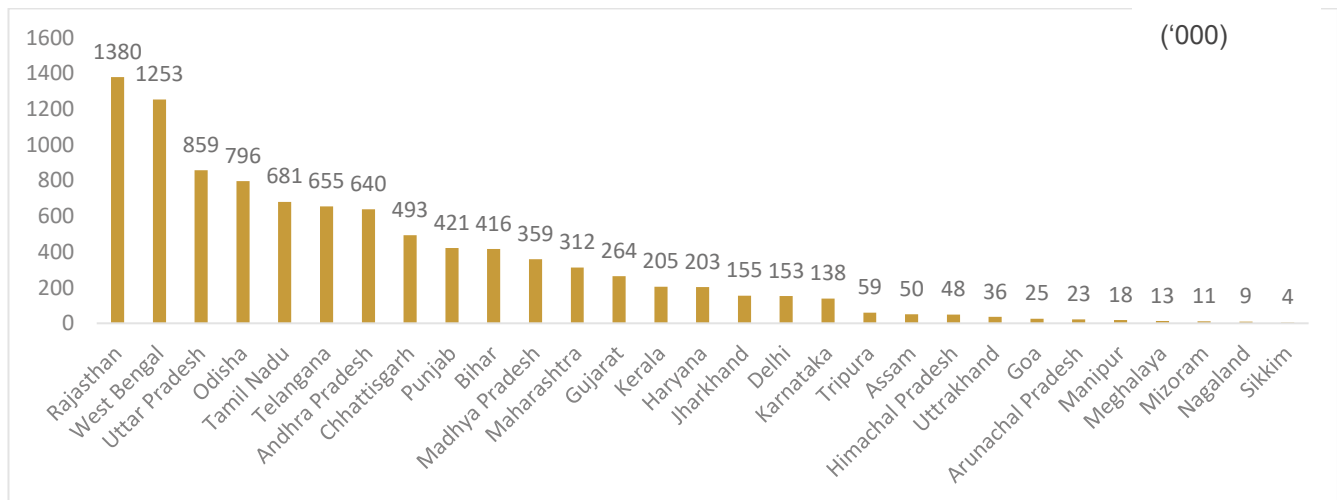
Data for National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) from January 2021to December 2021.

NCDs include addition of positive cases of diabetes, hypertension, both diabetes and hypertension, cardiovascular ailments, stroke and common cancers

Source: NHP 2022, CRISIL MI&A

Region-wise number of persons diagnosed with NCDs in CY21 ('000)
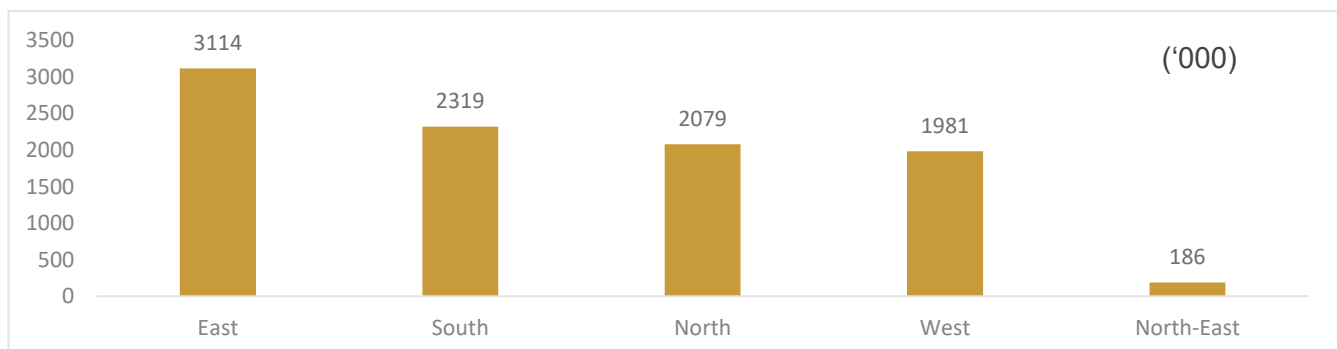
Note: Northeast includes states like Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura

East includes states like Bihar, Jharkhand, Odisha, West Bengal and Chattisgarh

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North includes states like Punjab, Uttarakhand, Uttar Pradesh, Haryana, Madhya Pradesh, Delhi and Himachal Pradesh
West includes states like Maharashtra, Gujarat, Rajasthan, and Goa
South includes states like Andhra Pradesh, Karnataka, Tamil Nadu, Kerala and Telangana
NCDs include addition of positive cases of diabetes, hypertension, both diabetes and hypertension, cardiovascular ailments, stroke and common cancers
*Data for National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) from January 2021 to December 2021*
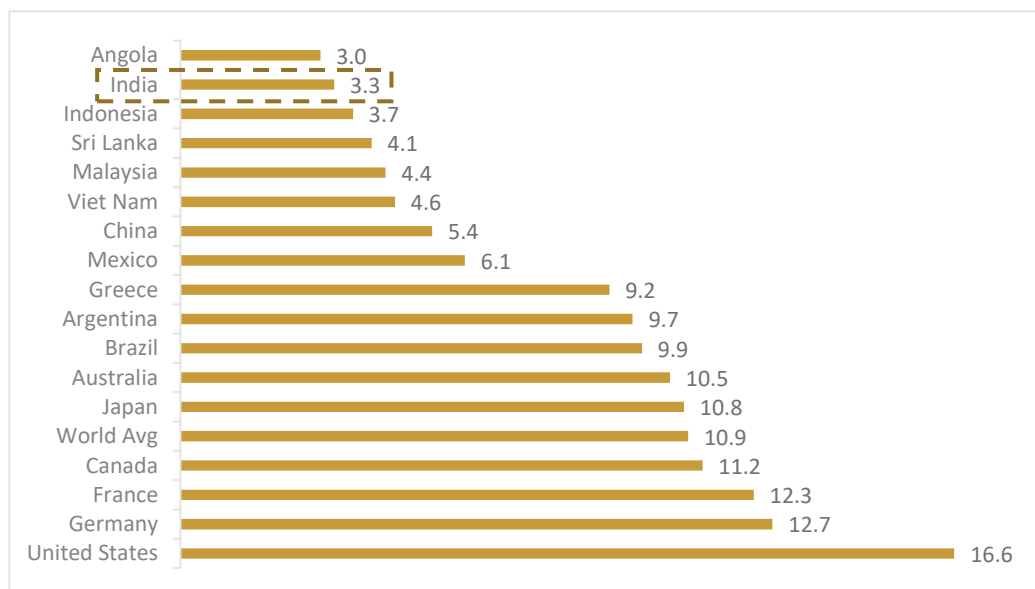*Source: NHP 2022, CRISIL MI&A*

1.4 India's social and healthcare parameters

Along with the structural demand existing in the country and the potential opportunity it provides for growth, provision of healthcare in India is still riddled with many challenges. The key challenges are inadequate health infrastructure, unequal quality of services provided based on affordability and healthcare financing.

India lags peers in healthcare expenditure

Global healthcare spending has been rising faster in keeping with the economic growth. As the economy grows, public and private spending on health increases, too. Also, greater sedentary work is giving rise to chronic diseases, which is also pushing up healthcare spending. Fast-growing economies with low spending on health are seeing chronic diseases increase dramatically as they move up the income ladder. Developed economies such as United states, Germany, France, Japan, United Kingdom, spend higher on healthcare as compared to developing nations such as India, Vietnam, Indonesia, etc.

Current healthcare expenditure as % of GDP (2021)

Country	% of GDP
Angola	3.0
India	3.3
Indonesia	3.7
Sri Lanka	4.1
Malaysia	4.4
Viet Nam	4.6
China	5.4
Mexico	6.1
Greece	9.2
Argentina	9.7
Brazil	9.9
Australia	10.5
Japan	10.8
World Avg	10.9
Canada	11.2
France	12.3
Germany	12.7
United States	16.6

Note: Latest data has been considered. Data for Canada, Germany and United States is as of 2022, rest 2021
World average is for the year 2020
Source: Global Health Expenditure Database accessed in May 2024, World Health Organization; CRISIL MI&A

According to the Global Health Expenditure Database compiled by the WHO, in CY2021, India's expenditure on healthcare was 3.3% of GDP. As of CY2021, India's healthcare spending as a percentage of GDP trails not just developed countries, such as the US and UK, but also developing countries such as Brazil, Vietnam, Sri Lanka and Malaysia.

Consulting

India spends too little on healthcare

Public healthcare expenditure is low, with private sector accounting for a lion's share

Domestic general expenditure on health as % of Current Healthcare Expenditure (CHE) (CY2021)

Government health expenditure 34%

Private health expenditure 66%
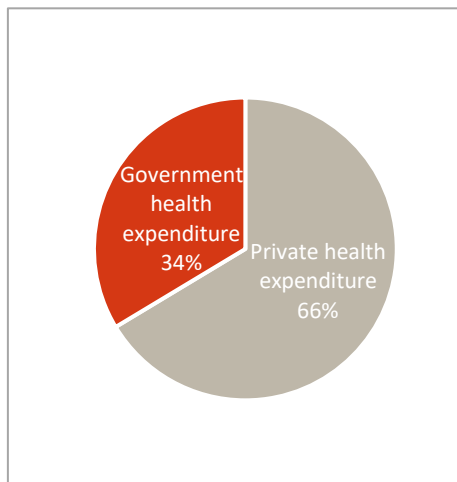
India's current healthcare expenditure (CHE) is skewed more towards private expenditure compared with public expenditure. Government expenditure on healthcare has remained range-bound at 20-30% of the current healthcare expenditure from CY10 to CY16. Government expenditure has since crossed 30% in the last five years. The rest of the expenditure is private in nature (expenditure from resources with no government control such as voluntary health insurance, and the direct payments for health by corporations (profit, not-for-profit and non-government organisations) and households. However, the government aims to increase public healthcare expenditure to 2.5-3% of GDP by 2025 from the current 2%, as per the National Health Policy.

Source: Global Health Expenditure Database- World Health Organisation, CRISIL MI&A

Nearly 17% of the rural population and 13% of the urban population are dependent on borrowings for funding their healthcare expenditure for July 2017- June 2018 as per NSS 75th Round Health in India Report. And nearly 80% of the rural population and 84% of the urban population use their household savings on healthcare-related expenditure as per "Health in India – 2018, NSS 75th Round". Health expenditures incurred by people contribute to nearly 3.6% and 2.9% of rural and urban poverty, respectively. And annually, an estimated 50 to 60 million people fall into poverty due to healthcare-related expenditure. However, with measures like Pradhan Mantri Jan Arogya Yojana (PMJAY), the problems with regards to affordability of healthcare is expected to ease especially for the deprived population.

Out of pocket spending as % of CHE (2021)

Country	Value
France	8.9
United States	10.7
Japan	12.0
Germany	12.2
Australia	13.8
Canada	14.9
Argentina	22.4
Brazil	22.7
Angola	23.4
Indonesia	27.5
Malaysia	32.1
Greece	33.3
China	34.4
Viet Nam	40.0
Mexico	41.4
Sri Lanka	43.6
India	49.8

Note: Latest data has been considered. Data for Canada is as of 2022, rest 2021
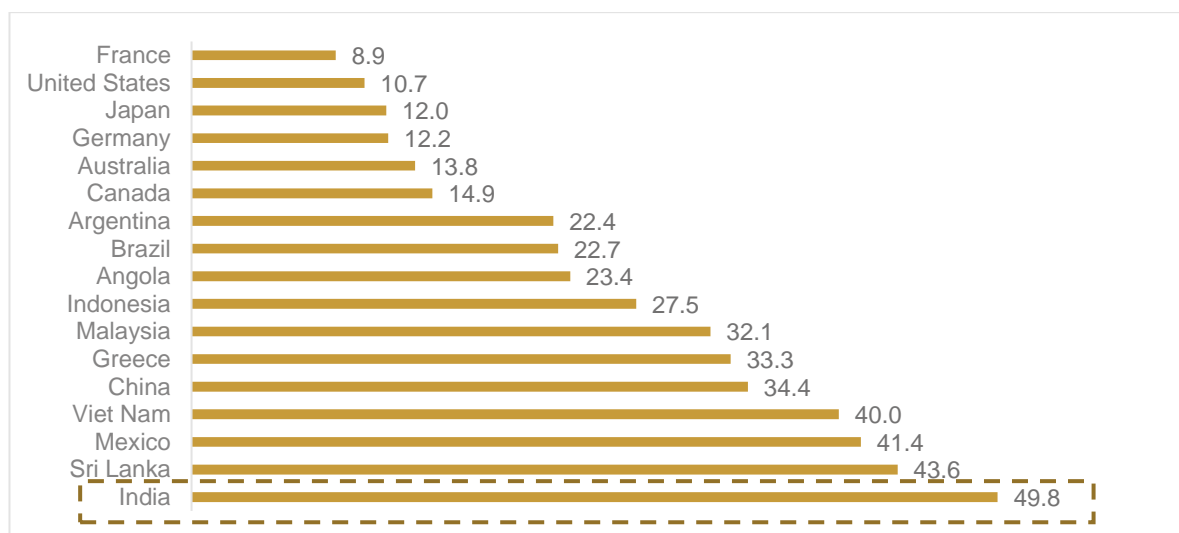*Source: Global Health Expenditure Database accessed in May 2024, World Health Organization; CRISIL MI&A*

Consulting

Health infrastructure of India needs improvement

The adequacy of a country's healthcare infrastructure and personnel is a barometer of its quality of healthcare. India accounts for nearly a fifth of the world's population but has an overall bed density of merely 15 per 10,000 people, with the situation being far worse in rural than urban areas. India's bed density not only falls far behind the global median of 29 beds, it also lags that of other developing countries such as Brazil (25 beds), Malaysia (20 beds), and Vietnam (26 beds).

Bed densities across countries - hospital beds (per 10,000 population)
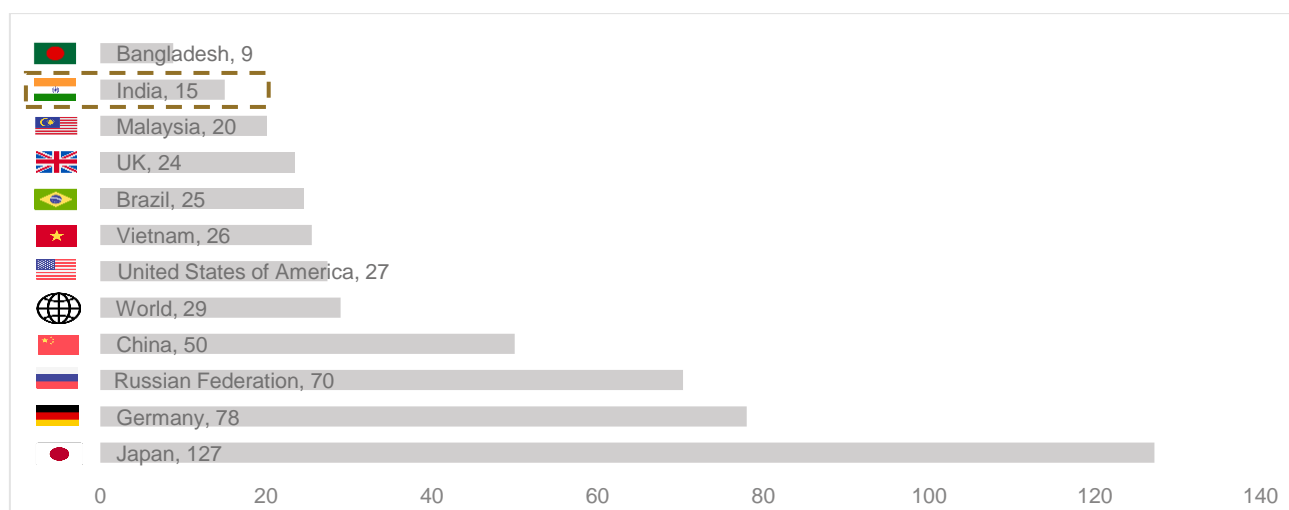
Note: India bed density is estimated by CRISIL MI&A for FY 2022, CY2019 figure for Bangladesh, CY2020 figures for Japan, Germany, China, United States and World, CY2021 figures for Russian Federation, Brazil, UK and Malaysia, CY2017 for Vietnam

Source: World Health Organization Database, The World Bank, CRISIL MI&A

Hospitalisation cost in private hospitals in India is 7.2x more than government hospitals

In rural areas, the average medical expense per hospitalisation in government/public hospitals was Rs 4,290 vis-à-vis Rs 27,347 for private hospitals (NSS Survey: July 2017-June 2018). The average medical expense for all hospitals, including charitable/NGO/trust-run, in rural areas was Rs 16,676 per hospitalisation. Similarly, the average medical expense for government/ public hospitals in urban areas was Rs 4,837 per hospitalisation, while for private hospitals and charitable hospitals, it was Rs 38,822 and Rs 26,247, respectively.

Overall, the cost of healthcare in private hospitals is much higher than in government/public hospitals, and this difference is more pronounced in urban areas, owing to several factors, such as higher cost of living, availability of advanced medical technology and higher salaries of doctors and other healthcare professionals.

Consulting

Average medical expenditure per hospitalisation case in India (July 2017 to June 2018)

(Rs)

	Government/ Public	Private	All (Incl. charitable/ NGO/ trust-run)
Rural	4,290	27,347	16,676
Urban	4,837	38,822	26,247
Rural+ Urban	4,452	31,845	20,135
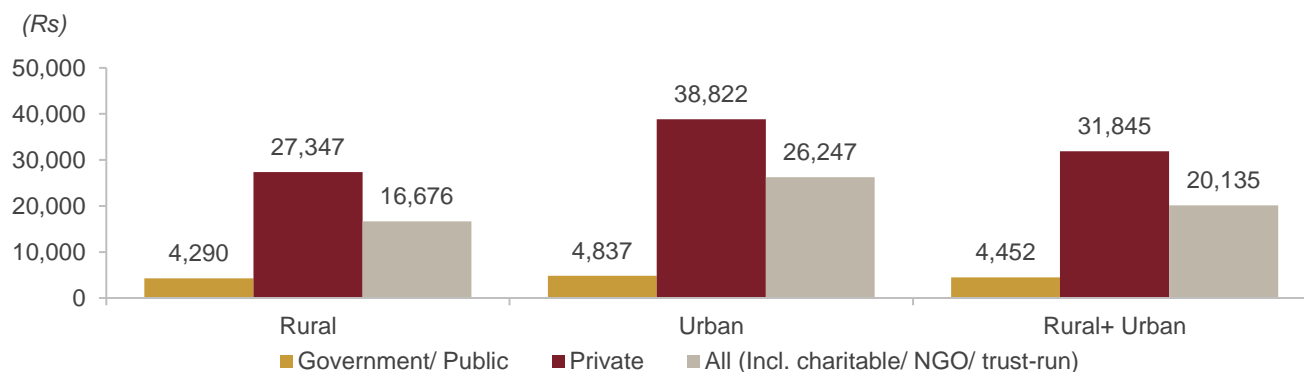
Source: NSS, CRISIL MI&A

The onset of the Covid-19 pandemic posed significant challenges to the healthcare sector across the world. In India, it exposed the structural weakness of the healthcare system, such as inadequacy of equipment, supplies and medicines. To address these, the government implemented several measures, both on the fiscal and policy fronts.

In March 2020, the government expanded AB-PMJAY, which provides health insurance to the poor, bringing the cost of Covid-19 treatment under its ambit.

Further, to enhance healthcare infrastructure, the government established the PM CARES Fund to mobilise resources for Covid-19 relief efforts. In FY22, donations totalled ~Rs 19.4 billion, which was utilised to set up Covid-19 makeshift hospitals, procure medical equipment, and strengthen healthcare facilities across the country.

On the policy front, the government issued guidelines governing telemedicine to promote remote healthcare consultation, ensuring access to medical services while minimising physical contact. The move helped patients receive medical assistance even during the pandemic-induced lockdown. Furthermore, regulatory reforms were initiated to expedite the approval process for Covid-19-related drugs, diagnostic kits, and medical devices. These changes were aimed at facilitating timely access to medicines and technologies required for pandemic management. In addition, the government took concrete steps to increase awareness about Covid-19, social distancing and vaccination drives.

Government health spend up in absolute terms, but down as % of total budget

In absolute terms, the government's allocation to healthcare has increased from Rs 530 billion in FY18 to Rs 902 billion for FY25 (budgeted estimates), at a CAGR of 7.9%. However, as a percentage of the Union Budget 2024-25, the allocation has decreased from 2.5% in FY18 to 1.9%.

Although healthcare expenditure increased significantly by ~26% on-year in FY21 due to fund allocation for pandemic-related measures such as vaccination drives sustaining in FY22, it declined ~8% on-year in FY23 with the withdrawal of pandemic support.

In FY24, healthcare allocation in the budget rose ~7.7% on-year, driven by increase in expenditure on schemes such as Pradhan Mantri Atmanirbhar Swasth Bharat Yojana, which aims to establish primary healthcare infrastructure, Pradhan Mantri Swasthya Suraksha Yojana, which focuses on setting up new All India Institute of Medical Sciences hospitals and enhancing facilities at government medical colleges in states, and PMJAY, a health insurance scheme. In addition, the budget's allocation to healthcare has increased ~13.8% on-year FY25, improving the share of healthcare allocation in the total budget to 1.9%.

Consulting

Budgetary allocation for healthcare over the years
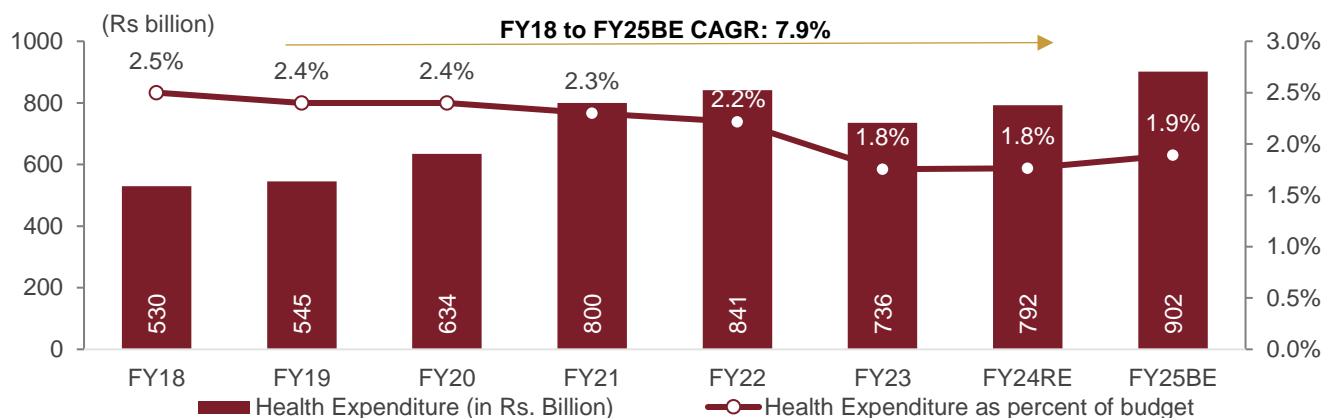
1.5 Key healthcare schemes and programmes under implementation/ announced

Key government healthcare schemes

Sl. No.	Scheme	Launched	Description
1	**National Health Mission (NHM)**	-	• The National Health Mission (NHM) is a flagship programme of the government, which provides accessible, affordable, and quality healthcare to all sections of the society. It takes a comprehensive approach to address the country's healthcare needs. NHM has two sub-missions — National Rural Health Mission (NRHM) and the National Urban Health Mission (NUHM) — which target rural and urban populations, respectively.
1.1	National Sickle Cell Anaemia Elimination Mission	2023	• As a part of the NHM, the government announced the National Sickle Cell Anaemia Elimination Programme in the Union Budget 2022-23. It focuses on addressing significant health challenges posed by sickle cell disease, particularly among the tribal population. As of July 2023, it has been implemented in 17 high-focus states to improve the care and prospects of all sickle cell disease patients while reducing its prevalence.
1.2	Free Diagnostics Service Initiative	2015	• This was launched under the NHM to provide better access to diagnostic services at public health facilities, with the aim of reducing OOP expenditure on diagnostics, which was relatively high at 10% as per National Sample Survey Office's (NSSO) 71st round. This initiative, which improves accessibility of free diagnostics services through in-house, public-private partnership (PPP) and hybrid modes, has three components – Essential Pathology Initiative, Tele-Radiology Initiative, and CT Scan Services at District Hospital and Technology Support.
1.3	National Urban Health Mission	2013	• Addresses the healthcare needs of the urban population with a focus on the poor, by making available to them essential primary healthcare services and reducing their OOP expenditure for treatment
1.4	National Rural Health Mission	2005	• Provides accessible, affordable and quality healthcare to the rural population, especially the vulnerable groups
2	**Ayushman Bharat Digital Mission**	**2021**	• Ayushman Bharat Digital Mission aims to create a national digital health ecosystem that will enable seamless exchange of electronic health records (EHRs) and other health-related information. It was launched in September 2021 and is expected to be fully implemented by 2025.

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3	**Pradhan Mantri Ayushman Bharat Health Infrastructure Mission**	**2021**	• The PM-ABHIM was announced on February 1, 2021, as part of the Atmanirbhar Bharat package for the healthcare sector. Its primary aim is to address critical gaps in the health infrastructure, surveillance, and healthcare research in urban and rural areas. It also promotes self-reliance and empowers communities to effectively manage pandemics and health crises. The scheme's total financial outlay for FY22-FY26 is Rs 641.8 billion, which includes the cost of monitoring and evaluation and setting up of a project management unit.
4	**Ayushman Bharat**		• Ayushman Bharat, also known as Pradhan Mantri Jan Arogya Yojana (PMJAY), was launched in September 2018 to provide affordable healthcare to economically vulnerable sections of the society. • The PM-JAY aims to provide Rs 0.5 million health cover per family per year for secondary and tertiary care hospitalisation. The scheme is expected to benefit over 107.4 million poor and vulnerable families (~500 million individuals).
4.1	Health and Wellness Centres	2018	• Aims to deliver an expanded range of services to address the primary healthcare needs of the entire population in their area, expanding access, and ensuring universality and equality
4.2	Pradhan Mantri Jan Arogya Yojana	2018	• Aims to provide Rs 5 lakh health cover per family per year for secondary and tertiary care hospitalisation to over 107.4 million vulnerable families (approximately 500 million beneficiaries.)

Source: Budget documents, CRISIL MI&A

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2 Introduction to healthcare industry in India

2.1 Structure of healthcare industry
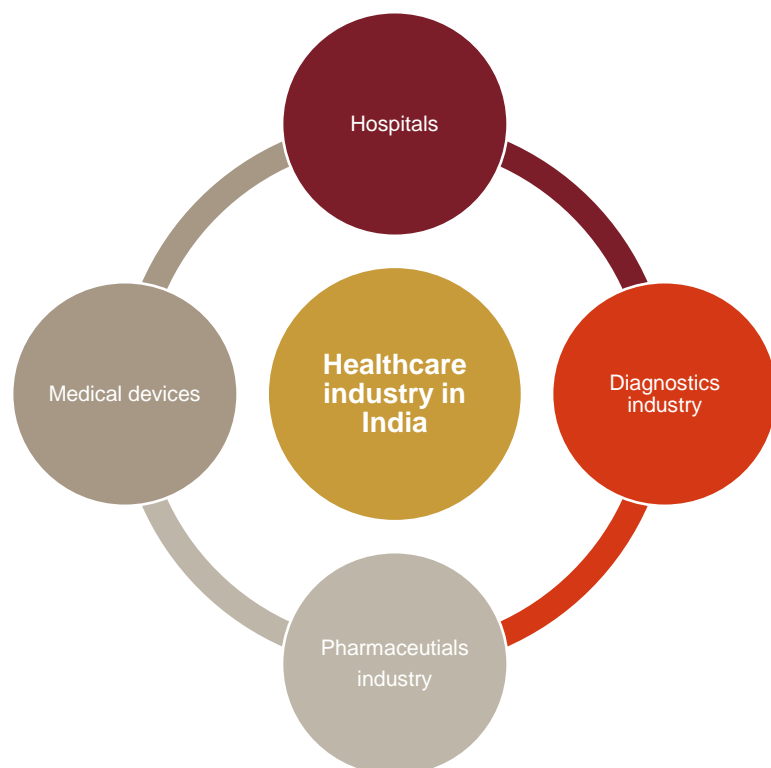
Source: CRISIL MI&A

India's fast-growing healthcare industry has become one of the leading contributors to the economy. A combination of economic and demographic factors is driving healthcare demand in the country. Factors such as an ageing population, a growing middle class, increasing incidence of lifestyle diseases, and the adoption of technology are some of the key drivers.

The domestic healthcare industry comprises the following segments: hospitals, pharmaceuticals, medical devices, diagnostic services, medical equipment, and other support services to the healthcare players.

Healthcare market in India to grow at a 10-11% Compounded Annual Growth Rate (CAGR) between FY24 and FY28

The healthcare industry grew at 10-11% CAGR between FY17 and FY24 to ~Rs 9.5-10.5 trillion. By FY28, the industry is expected to grow to Rs 14.5-15.5 trillion, at a CAGR of 10-11%, driven by factors such as an aging population, increased incidence of lifestyle diseases, growing healthcare awareness, technology adoption and a growing affluent middle class.

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Indian healthcare market

(Rs. Trillion)

Chart showing Indian healthcare market (Rs. Trillion):
- FY17: 4.9 (Diagnostics 10%)
- FY24: 9.5 -10.5 (Diagnostics 9%)
- FY28P: 14.5 -15.5 (Diagnostics 7-11%)

FY17 to FY24 CAGR:10-11%
FY24 to FY28P CAGR:10-11%

Legend: ■ Rest of healthcare market ■ Diagnostics
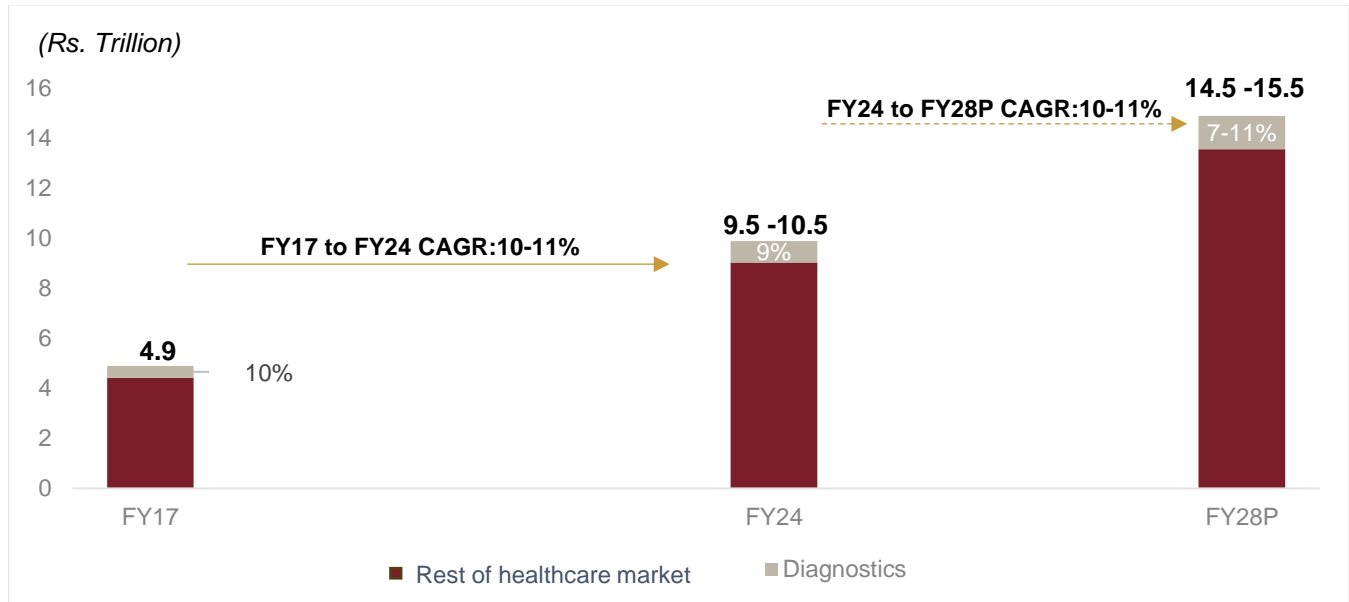
	Indian diagnostics market	Total Indian healthcare market
CAGR FY17-24	9-10%	10-11%
CAGR FY24-28P	10-12%	10-11%

E: Estimated; P: Projected

Notes:

1) Hospitals market in the above table include the overall healthcare delivery segment in India, including clinic/physician consultations, however it excludes the Pharmaceuticals and diagnostic market for IPD and OPD at hospitals

Source: Industry data, CRISIL MI&A

Within the healthcare industry, Diagnostics formed about 10% of the industry in FY17. The diagnostic industry grew at 9-10% from FY17 to FY24 to form 9% of the 9.5-10.5 trillion Healthcare market in FY24. The growth was led by increasing number of people undergoing preventive health check-ups, Rising disposable income, prevalence of non-communicable diseases etc. From FY24 to FY28, the diagnostics industry is expected to grow at 10-12% thereby outpacing the growth of the healthcare industry which is expected to grow at 10-11% CAGR during the same period.

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3 Assessment of Indian diagnostics industry

## 3.1 Overview of the Indian diagnostic industry

Indian diagnostics industry to log a 10-12% Compounded Annual Growth Rate (CAGR) between FY24 and FY28

The diagnostic services sector plays a pivotal role in recommending essential treatments and monitoring the recovery of patients post-treatment. The industry experienced robust growth at a CAGR of 9-10% over FY17 and FY24 due to factors like increasing urbanisation, rising disposable income, increased test menu by players, increase in prevalence of non-communicable diseases which has led to a rise in healthcare demand.

The diagnostics industry's market size is poised to grow at a CAGR of 10-12% over FY24 and FY28 to Rs 1,275-1,375 billion led by rising literacy rates and disposable income among the population, leading to increased awareness and demand for quality healthcare services, including diagnostics. Further, a rise in urbanisation, coupled with lifestyle-related diseases and aging population, will create a greater need for accurate and timely diagnostic services to identify and manage these health issues effectively. Chained diagnostic players are expected to grow at a faster rate than the overall industry between FY24 and FY28.

Overall, increased focus on preventative medicine, rising incidence of chronic and lifestyle diseases, a growing preference for evidence-based treatment, the changing nature of diseases, expansion of organised healthcare and increased use of technology in healthcare are set to drive Indian diagnostics services industry's growth.

Indian diagnostics industry, trend and projection (Rs. billion)
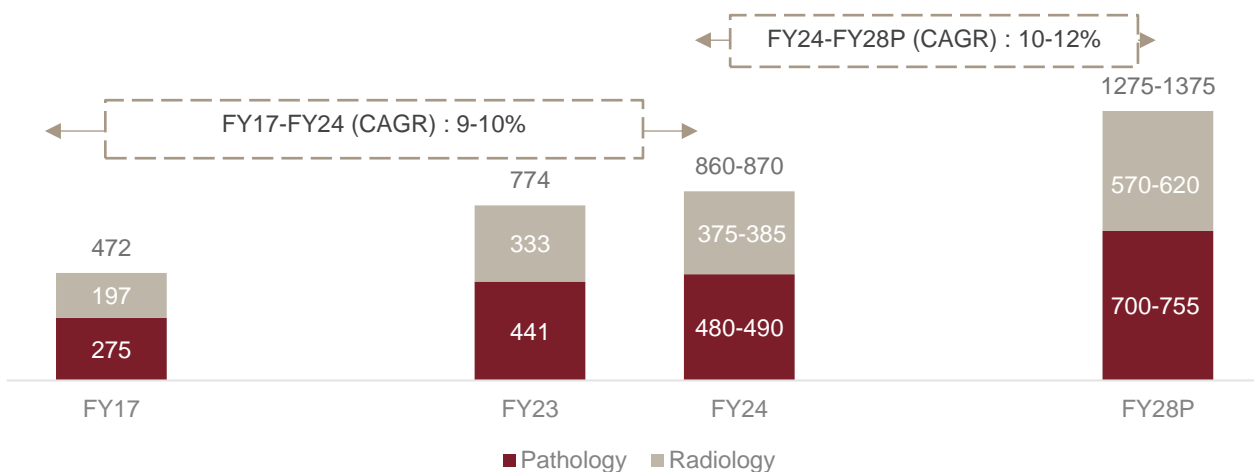
E: Estimated; P: Projected
Source: CRISIL MI&A

The pathology segment, estimated to have grown steadily at a CAGR of ~8-9% over FY17 to FY24, is estimated to clock a CAGR of 9-11% over FY24 to FY28. This trajectory suggests an increasing demand for pathology diagnostic services, potentially driven by factors such as rising chronic disease prevalence and improved diagnostic technologies. Similarly, the radiology segment, estimated to have grown at a CAGR of ~9.5-10.5% over FY17 to FY24, is expected to rise further at a CAGR of 11-13% over FY24 to FY28, indicating robust growth potential led by technological advancements and heightened demand for diagnostic imaging across medical specialties. Overall, the analysis underscores positive growth prospects for both pathology and radiology segments in the Indian diagnostic market, driven by evolving healthcare needs and technological innovation.

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Market Intelligence & Analytics

CRISIL
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3.2 Structure of diagnostics industry

Based on service offerings

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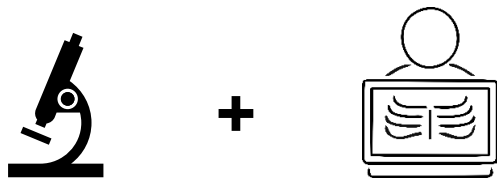
Pathology

Pathology testing involves reporting diagnostic information based on collected samples (blood, urine, stool, and so on) and analysing them in a laboratory to arrive at useful clinical information.

Radiology

Radiology involves procedures ranging from simple X-rays and ultrasounds to specialised tests such as CT and PET-CT scans, which help diagnose diseases by indicating anatomical and physiological changes in a patient's body.

Based on business models

1. Hospital-based
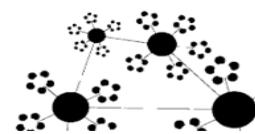
2. Pan-India/regional chain

3. Standalone centre

4. Public-private partnership

Source: Industry, CRISIL MI&A

Segment-wise break-up of the diagnostics industry (FY24 estimates)

Pathology forms a 56% of the overall diagnostics industry

	Pathology **56%**	**Pathology testing, including routine and specialised tests, commands a higher share of the diagnostics market. Typically, a battery of tests is prescribed under a single pathology test panel for a single patient.**

E: Estimated
Note: The above analysis is without taking into consideration Covid-19 testing business
Source: CRISIL MI&A

Region-wise pathology tests as per Health Management Information System (HMIS)

Region	Pathology
North	24%
South	38%
East including Northeast	14%
West	24%

Source: Health Management Information System (HMIS) data for the year 2021, CRISIL MI&A

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Radiology forms a 44% of the overall diagnostics industry

	Radiology **44%**	Radiology tests are costlier than pathology tests. Though the volumes of pathology tests prescribed are greater, the price of a single pathology test is usually lower than a single imaging test such as an MRI or even an X-ray scan. The latter may usually cost 2-3 (or more) times a regular pathological test.

E: Estimated
Note: The above analysis is without taking into consideration Covid-19 testing business
Source: CRISIL MI&A

Region-wise radiology tests as per Health Management Information System (HMIS)

Region	Radiology
North	26%
South	30%
East including Northeast	18%
West	26%

Source: Health Management Information System (HMIS) data for the year 2021, CRISIL MI&A

As per volume data reported in HMIS by the Ministry of Health & Family Welfare, the penetration rates of pathology and radiology services in East including Northeast India (data as of March 2021) underscore significant disparities with other regions. The region exhibits the lowest penetration rates for both pathology (14%) and radiology (18%) services. These figures point towards potential challenges in access to and penetration of diagnostic facilities in the region.

There are various reasons for the disparity, including inadequate healthcare infrastructure, limited availability of diagnostic facilities, geographical barriers and socioeconomic factors. Also, in the region, particularly in rural and remote areas, healthcare facilities are scarcely equipped with pathology and radiology services.

Addressing these challenges requires targeted interventions aimed at improving healthcare infrastructure, increasing access to diagnostic services and addressing socioeconomic determinants of health. Investments in healthcare facilities, equipment and trained personnel are essential to enhance the availability and quality of diagnostic services in East India including Northeast. Initiatives such as mobile healthcare units, telemedicine and community health programmes can also help reach underserved populations in remote areas.

Furthermore, policy interventions focused on promoting preventive healthcare, early diagnosis and awareness about the importance of diagnostic services are crucial. By prioritising healthcare initiatives tailored to the specific needs of the eastern region, policymakers can work towards reducing healthcare disparities, improving health outcomes and ensuring equitable access to diagnostic services across the region.

Consulting

Estimated break-up of the Indian diagnostics industry

FY20

- Hospital labs, 36-40%
- Standalone centres, 45-49%
- Diagnostic chains 13-17%
  - Multi-regional chains, 35-40%
  - Regional chains, 60-65%

FY24

- Hospital labs, 36-40%
- Standalone centres, 35-39%
- Diagnostic chains 20-24%
  - Multi-regional chains, 34-38%
  - Regional chains, 62-66%
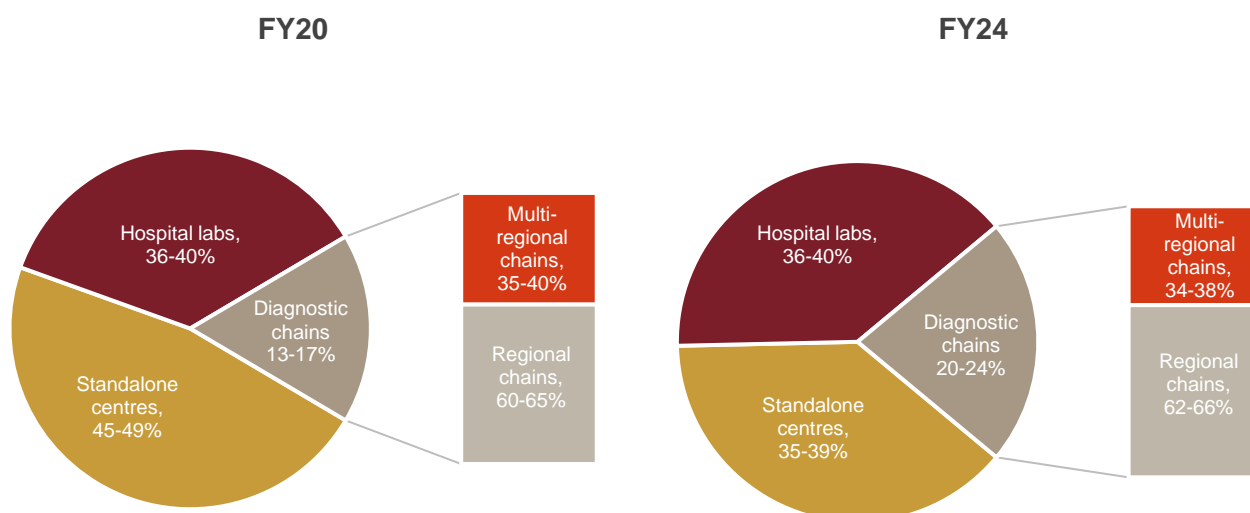
Note: The average of ranges mentioned add up to 100%
E: Estimated; P: Projected
Source: CRISIL MI&A

Industry shifting towards diagnostic chains

The Indian diagnostics industry is highly fragmented, given the high proportion of standalone centres and hospitals labs occupying a smaller share of the pie. Diagnostic chains are further split into regional and multi-regional chains, with regional chains accounting for the majority.

The industry's profitability is defined based on high volume of testing and optimal utilisation of labs. Given the low entry barriers and lack of a strong regulatory environment, the industry has many standalone players. This has made the industry highly competitive and fragmented, and hence, standalone diagnostic players are finding it hard to stay profitable. The standalone players also face problems in scaling up their operations on account of the large capital expenditure required for investment into technologies enabling complex radiology and pathology services

Diagnostic chains, on the other hand, have stronger financial discipline and negotiating power with suppliers, greater capital, and administrative resources to meet the needs to sustain the business compared with standalone diagnostic centres. Diagnostic chains have expanded into geographies, where they have limited presence via the inorganic route. Tier 2 and 3 cities are the major focus of these established players, where struggling standalone centres become prime opportunities for acquisition.

The industry has witnessed a shift from standalone centres to diagnostic chains, due to their higher quality of service and unavailability of complex tests with standalone centres - not only at the country level but also in regional markets.

The shift was further accelerated by Covid-19 pandemic, which significantly increased the demand for diagnostic testing, highlighting the importance of reliable and accessible diagnostic services. Diagnostic chains, with their extensive networks and advanced infrastructure, were better positioned to handle the surge in testing volumes. The diagnostic chains could quickly scale up their operations, adhere to safety protocols, and provide accurate and timely results. Furthermore, their ability to provide home collection services and online report access during

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lockdowns made them more accessible and convenient for patients, which led to a significant increase in their market share.

In addition, diagnostic chains possessing better national and international accreditations and a scalable business model, wherein through brand reputation and operational efficiency these chains can cater to a larger set of population, has led to an increase in the share of diagnostic chains to 20-24% of the overall diagnostics industry as of FY24 from 13-17% in FY20. Within the diagnostics chains, multi-regional chains led diversified presence, large scale of operations supporting volume growth coupled with acquisitions have gained market during the period mentioned.

Hospital-based diagnostic centres

Many hospitals have in-house pathology laboratories and radiology centres. Some private hospitals outsource the management of their diagnostic facilities to third-party private players, while major hospital chains such as Fortis Healthcare, Apollo Hospitals, and Max Healthcare, have their own diagnostic arm. Diagnostic centers which are located within the premises of hospitals form a major part of the Indian diagnostic industry forming 36-40% of the industry in FY24.

Generally, mid- and small-sized hospitals prefer to outsource their tests rather than set up in-house laboratory testing facilities. Hospitals that lack equipment to conduct advanced tests may also partner with other qualified diagnostic centres for radiology and pathology requirements. Furthermore, equipment for advanced tests is expensive and many hospitals may find it economically unviable to operate them owing to low testing volumes. For example, a hospital may have a machine to test whether a patient is HIV positive; however, the sample will be sent to a specialised pathology lab to determine the virus count. Specialised tests with low patient volumes may also be outsourced to chain diagnostic labs. Certain high maintenance and capex intensive radiology services such as magnetic resonance imaging (MRI) and computed tomography (CT) scan are also done through independent diagnostic chains.

Diagnostic chains

Diagnostic chains such as Agilus Diagnostics, Dr Lal PathLabs, Krsnaa Diagnostics, Metropolis, Suraksha Diagnostics and Thyrocare are present either in a specific region/geography or across regions and offer either or both pathology and radiology services. There are also prominent regional chains across different geographies, such as Vijaya Diagnostic, Medall Healthcare, Suraksha Diagnostic, Suburban Diagnostic and Aarthi Scans, which have significant brand resonance. Diagnostic chains adopt a hub-and-spoke model (usually for pathology-centric services), helping them increase their catchment area. Tele-reporting, another new technology offering has helped increase the coverage of players as it provides scope for reporting from any corner of the country. Specialised testing has seen many new entrants such as iGenetics and CORE Diagnostic, since substantial growth is expected in this area owing to a shift in disease epidemiology in the country.

Standalone centres

Low entry barriers and the absence of stringent regulations have led to growth in standalone centres. These centres usually carry out basic tests that require minimal investment and space; however, some offer specialised tests such as MRI, CT and positron emission tomography (PET) scan. They mostly have accreditations as a testimony of their expertise and quality of services.

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Government-led Public (PPP) model

The model involves diagnostic players entering into PPP arrangements with the government to provide specific diagnostic services (pathology, radiology or both) for a specific concession period at predefined rates to improve health facilities and enable healthcare access to all, especially people at the bottom of the pyramid. In a PPP model, government support can vary from providing land lease and upfront capital infusion to financial concessions on the capital infused by private players, rent-free land and captive customers. Players with an established track record and most competitive prices have a significant chance of winning such PPP tenders. The government can contribute towards building infrastructure and managing operations of hospitals and diagnostic centres and, as a payer, it can pay for healthcare services provided by the private sector. The PPP player will carry out regular maintenance and operations of the facilities and equipment providing up-to-date services to enable healthcare access to all. The concession period for such agreements is generally long, for instance, a duration of 10 years.

The Public-Private Partnership (PPP) model and its potential

The public-private partnership (PPP) model in the diagnostic sector entails a collaborative effort between government entities and private diagnostic service providers to enhance the delivery of diagnostic services. This model encompasses various aspects, including infrastructure development, technology and equipment procurement, service delivery, capacity building, financial sustainability, quality assurance, and integration with healthcare systems. This partnership combines government investment and regulatory oversight with the efficiency and innovation of the private sector to ensure the accessibility, affordability, and quality of diagnostic services. By leveraging the strengths of both sectors, PPPs aim to address healthcare challenges and improve health outcomes for the population, particularly in underserved areas.

Huge potential for Public-Private Partnership (PPP) model diagnostics in an underpenetrated rural India

The NSS data on the percentage of cases that receive free medicines and diagnostic services reveal that there is no significant difference in the statistics between urban and rural areas. As per the report, the percentage of cases receiving free medicines in urban areas is 14.4% and that in rural stood at 13.8%. The figures remain similar for free X-ray/ECG. However, the trend differs slightly for other diagnostic services as the percentage is higher in urban areas (19.9%) compared with rural (18.4%). This can be attributed to the low penetration of diagnostic services in rural India. This offers a huge potential for the government to get into partnerships with diagnostic players to tap the highly underpenetrated rural areas of India.

Percentage of cases receiving free medicines, X-ray/ECG and other diagnostic tests

Source: NSS Report (75th round), CRISIL MI&A

Consulting
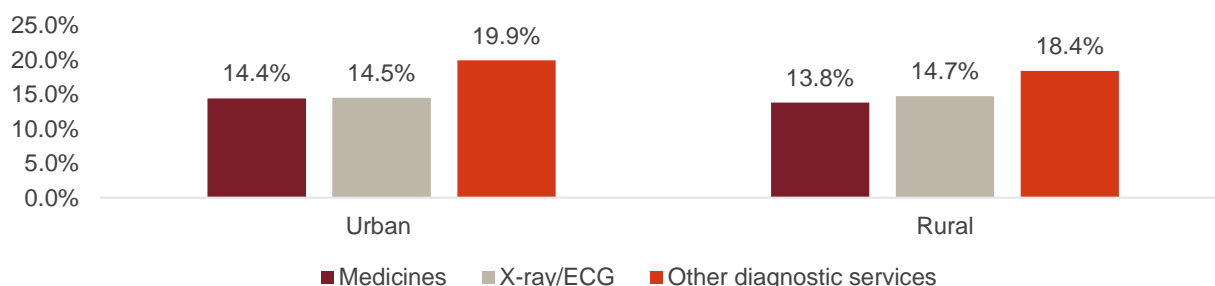
Public-Private Partnership (PPP) model aims to expand reach of services and reduce out-of-pocket expenditure

Over the years, the government has realised the importance of private participation in the healthcare industry and therefore, PPP models in diagnostics have gained traction over the past 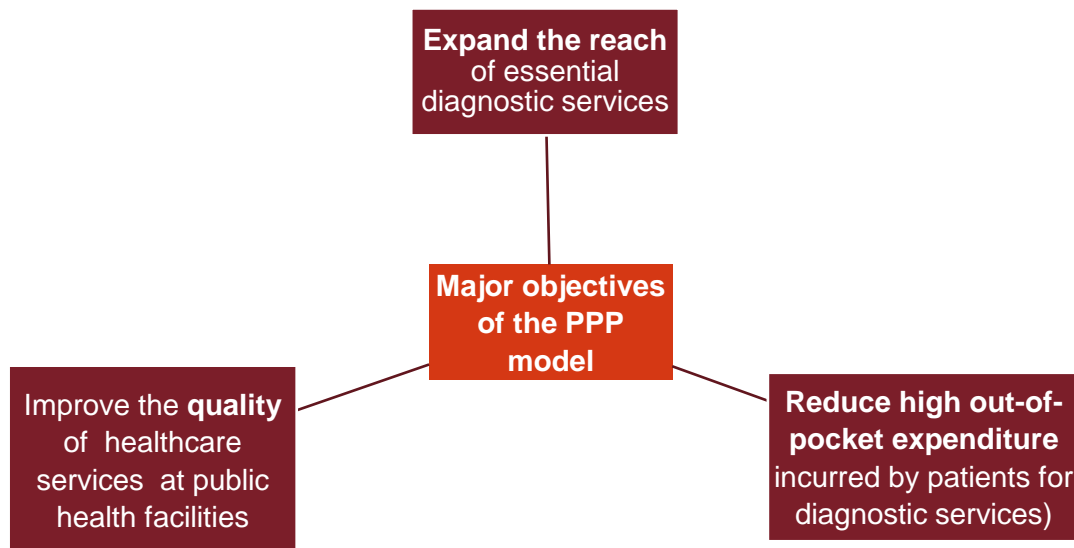five years. The model is expected to see further growth as India focuses more on strengthening primary healthcare centres, increasing the number of HWCs and making a policy shift towards preventive care from curative care. Schemes such as AB-HWCs and the Pradhan Mantri Atmanirbhar Swasth Bharat Yojana are evidence of this policy shift. The model has been adopted in various states such as Maharashtra, Andhra Pradesh, West Bengal, Bihar, Odisha, Uttar Pradesh, Jharkhand, Haryana and Uttarakhand.

Expand the reach of essential diagnostic services

Major objectives of the PPP model

Improve the **quality** of healthcare services at public health facilities

Reduce high out-of-pocket expenditure incurred by patients for diagnostic services)

The PPP model involves the development of a greenfield or brownfield diagnostic centre by the private player (service provider) across various hospitals in the country and, in certain cases, such a model involves the setting up of collection points at sub-centres, primary health centres, community health centres and other remote regions (hub and spoke model). The gamut of services provided by these centres involves both pathology and radiology. However, the service provider may only be involved in one aspect of the diagnostic services such as X-ray, CT scan or laboratory services. The physical premises for the development is provided by the authority and, largely, these PPP implementations are in existing hospitals, requiring improvement by the private player.

In certain cases, the project is greenfield and requires the private player to establish the centre from scratch. This would involve planning, designing and developing the diagnostic centres, as per the agreement. The concession period for such agreements is around 10 years and the premises are usually provided by the authority.

The PPP model works in two different manners. First, the authority (such as the state government) may involve the private players for the development of diagnostic centres across clusters of hospitals; and second, it can only involve an individual hospital. The method depends on the appeal to the private player in terms of volume of patients. In the case of the first method, a cluster of 3-6 districts is considered that requires improved diagnostics. Although the authority may bundle such assets, the bidders can bid for any or all the packages. Bidders would need to submit single technical proposals for all the packages and separate financial proposals for each package. The first method is more appealing to private players as it ensures standardisation, higher scale of returns, and economies of scale.

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Operational & Maintenance (O&M) responsibilities of the service provider under the Public-Private Partnership (PPP) model

The PPP model relies on the expertise and operational efficiency of the service provider (private player) and holds the service provider responsible for the costs incurred in the functioning of the centre. The operational and maintenance responsibilities of the service provider are largely given below:

- Carry out medical and support services per best of industry practices
- Acquire and operate mandatory standards and accreditation such as NABL and NABH
- Comply with monthly reports, inspections and key performance indicators
- Routine maintenance and repair work and minor alterations. This includes cleaning and sanitisation of the centre
- Maintain, repair and renew/ replace the diagnostic equipment and supporting infrastructure in the diagnostic centre
- Deploy clinical and non-clinical staff, ensure their training, safety and security
- Manage and disposal of all medical and other waste produced in the diagnostic centres

Working of the model

The services are provided free of cost to beneficiaries referred by government institutes, with the cost reimbursed by the authorities on a timely basis. Private beneficiaries are usually charged as per the rate quoted by the service provider. In terms of the services offered, essential diagnostic tests and their charges to respective patients are predetermined by the authority. Charges for additional services are mutually agreed between the authority and the concessionaire. These user charges have escalation clauses and therefore increase over the course of the concession period. These covenants are mentioned in the agreement and must be abided by.

Hub-and-spoke the most preferred model for diagnostic chains

The diagnostics industry's hub-and-spoke model, especially in the field of pathology, refers to a centralised approach for diagnostic testing and laboratory services. In this model, a central laboratory acts as the hub that receives and processes samples and smaller satellite locations — or spokes — collect and send the samples to the central facility for analysis.

In the context of pathology, this model involves a central pathology laboratory that handles a large volume of diagnostic tests. The central lab is equipped with advanced infrastructure, skilled personnel, and sophisticated technology to perform complex pathological examinations, including tissue biopsies, cytology and molecular testing. It acts as the primary site for sample analysis and result generation, and the satellite locations, such as clinics, hospitals, or collection centres, could serve as the spokes and handle sample collection, initial processing, and transportation to the central lab. These satellite locations often have limited testing capabilities and lack specialised equipment or expertise for comprehensive pathological examinations. Therefore, they rely on the hub for accurate and timely diagnosis.The hub-and-spoke model in the pathology industry offers several advantages. It

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centralises resources, expertise, and technology, ensuring standardised and high-quality testing across locations. It also enables efficient utilisation of expensive equipment and minimises duplication of services. Moreover, the model facilitates better coordination and collaboration among healthcare providers, as they can rely on a centralised pathology lab for accurate and timely test results.
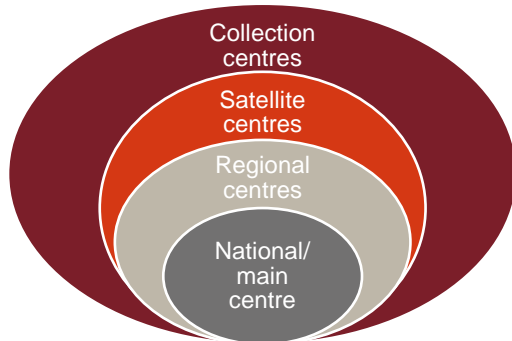
The components of this model include a national reference centre, regional or reference centres, satellite centres and collection centres

Note: The model above represents the typical flow of samples from the collection centre to the national reference centre. However, it may vary from player to player.
Source: Industry data, CRISIL MI&A

Value chain of the diagnostics industry
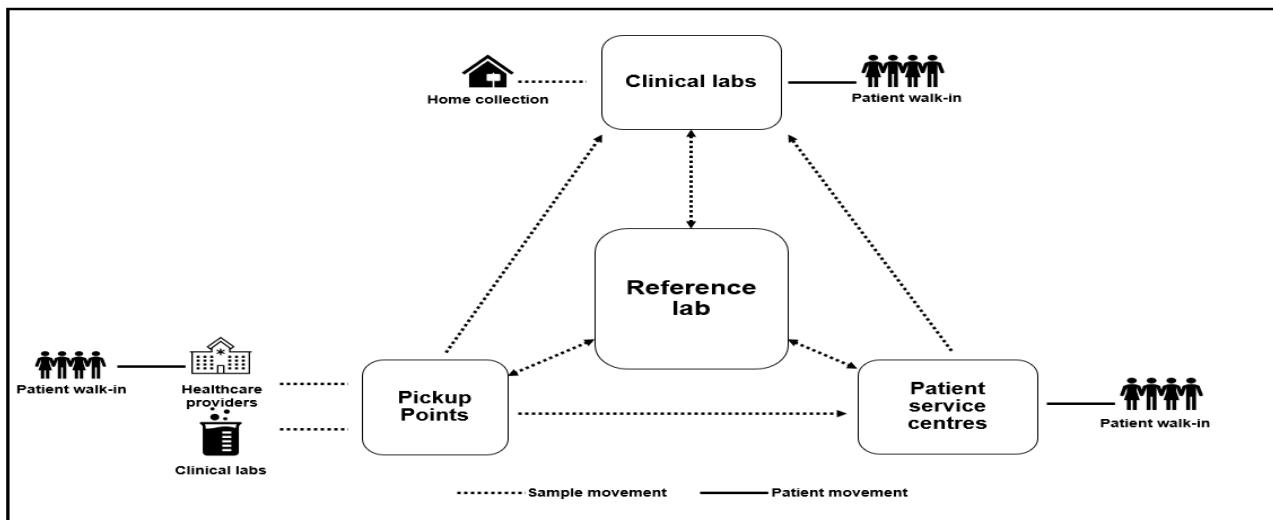
Note: Patient service centres serve as sample collection centres, accommodating walk-in patients for convenient specimen submission. However, samples are sent to clinical and reference labs for testing. Similarly, pickup points are designated only as sample collection centres aimed at efficiently gathering samples from clinical labs and healthcare providers.
Source: Industry data, CRISIL MI&A

National reference centres (main centre): These are located centrally, usually in large metropolitan areas, and serve as the corporate headquarters of diagnostic chain companies. They are equipped to conduct both routine and specialised pathology and radiology tests. All operations between the national reference centre and its spokes are centrally coordinated through a central server-applied laboratory information management system (LIMS), which offers customised enterprise resource planning (ERP) solutions for diagnostic lab companies, helping manage patient information and lab services. Reports generated by the regional/national reference centres are sent to patients through the collection/satellite centres or can be viewed online. The usual turnaround time for a national reference lab for report generation ranges from a few hours (for routine tests such as blood analyses and sugar tests) to two to four days, depending on the tests conducted.

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Diagnostic centres can also opt for air logistics, transporting samples collected at their collection centres in other cities by air. This is usually done for specialised tests that may be performed only at the national reference labs or, in the context of a hub-and-spoke model, at regional reference labs. Samples may be collected during the day and airlifted overnight to the national reference centre. In this case, the samples may take 12-24 hours to reach the reference lab. These labs then ensure faster turnaround times for sample analysis so that the overall time taken from sample collection to final report generation remains the shortest.

Many industry players are also adopting the tele-radiology practice, wherein the digital copies of images are sent to a radiologist at a distant location. The radiologist examines the images and provides insights in the report, which is sent to the centre and delivered to the patient. Hence, the practice operates via a hub-and-spoke model.

Regional reference centres: These are situated in large metropolitan cities and act as regional hubs that collect samples from the satellite and collection centres across the country. Like the main labs, reference centres also offer comprehensive and specialised testing facilities.

Satellite centres: These offer limited services. They mainly act as feeders for regional reference centres and the national/main centre. Based on the complexity of the test, a satellite centre may choose to transfer samples to a regional or national reference lab (whichever is closer and adequately equipped to carry out the required test). Satellite centres may be either owned or franchised by a diagnostic chain.

Collection centres: These are located in hospitals, nursing homes, pathology labs, clinics, prime commercial properties and retail spaces, among others. They may be company-owned or franchised. Collection centres do not carry out testing and are involved only in the collection and forwarding of patient samples to a satellite or reference lab. A single collection centre can typically cater to a 3-5 km radius. These collection centres usually have basic equipment in the form of a refrigerator and centrifuge and employ minimal staff, such as a receptionist, lab technician, attendants and delivery staff.

Diagnostic tests are critical and drive 70% of medical decisions

The diagnostics industry plays a pivotal role in preventing diseases by providing vital tools and services for early detection, accurate diagnosis and monitoring of several health conditions. According to the US Centers for Disease Control and Prevention (CDC), 70% of medical decisions depend on laboratory test results, indicating their importance in healthcare diagnosis. Furthermore, doctors usually prescribe multiple diagnostics tests such as blood tests, imaging scans and genetic screening for the early detection and monitoring of diseases. These tests not only help detect risk factors and diseases at an early stage, but also enable healthcare professionals to track disease progression, adjust treatment plans and provide personalised care. Hence, generally a single visit to the doctor leads to multiple diagnostic tests for proper treatment.

Moreover, the diagnostics industry assumes a crucial role in advancing proactive healthcare, especially in the post-pandemic era. Diagnostic tests identify potential health issues through early detection of symptoms, enabling timely intervention and treatment and promotion of proactive healthcare practices.

The outpatient department (OPD) and IPD serve critical roles in healthcare delivery, catering to patients with varying medical needs. The OPD acts as a primary interface for patients seeking non-emergency medical care, offering consultations, diagnostic tests and minor procedures. In contrast, the IPD provides comprehensive care for patients requiring hospitalisation, including intensive treatments, surgical interventions and post-operative care. Both departments are interconnected and rely on each other to ensure seamless patient care.

In OPD and IPD, ECG tests aid in identifying heart issues such as blockages. In the OPD, ECG is conducted during consultations to detect abnormalities such as ST-segment changes or arrhythmias. Similarly, in the IPD, ECG enables initial assessment of patients with symptoms of acute cardiac events. ECG variations observed in

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both settings guide further diagnostic evaluation and treatment decisions, facilitating timely interventions for patients at risk of or experiencing heart-related complications.

Pathology and radiology are integral components of both OPD and IPD services, playing crucial roles in the diagnostic process. In the OPD, pathology and radiology services support diagnostic evaluations and treatment planning for patients with diverse medical conditions. Similarly, in the IPD, these services play a vital role in disease monitoring, treatment assessment and surgical interventions.

Outpatients the prominent segment for diagnostic centres (FY24)

Outpatients account for a 57% share of the overall diagnostics industry. They are patients who do not require overnight stay at the hospital and include those seeking consultation and undergoing wellness tests; in-patients are patients treated while being admitted in a hospital
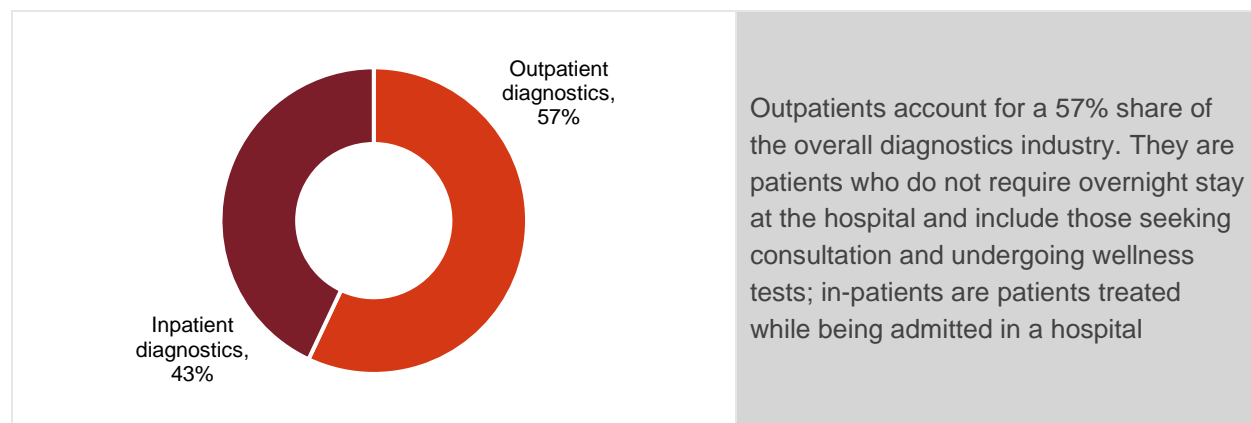
Note:
E: Estimated
Inpatient diagnostics includes wellness and preventive diagnostic tests
Source: Industry data, CRISIL MI&A

Rural areas account for only 24% of the diagnostics industry revenue

The diagnostics industry can also be broadly segregated into urban and rural centres. Urban centres typically have modern facilities and higher priced tests. These facilities are usually in public and private hospitals and clinics or are standalone centres or diagnostic chains. In contrast, rural centres are largely primary healthcare centres, government dispensaries and private dispensaries that have small-scale facilities and carry out basic tests. Ticket sizes are also usually lower than in urban centres.

In rural areas, diagnostic tests are carried out at government and public hospitals, primary healthcare centres, private doctor-run clinics, nursing homes, private dispensaries, charitable institutes and private hospitals. For more advanced diagnostic tests, rural patients are referred to the nearest urban centre, which indicates that there is a huge gap within healthcare services to serve rural India.

India's rural population (~70% of country's total population) contributed only 24% of the overall revenue of diagnostics market in FY24, suggesting under-penetration of diagnostics services in rural areas, as well as smaller ticket sizes.

In addition, as of FY24, Delhi NCR and Mumbai accounted for 14-16% of the diagnostics industry in value terms.

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Region-wise revenue break-up of diagnostics industry (FY24)

- Rural diagnostics
- Urban diagnostics
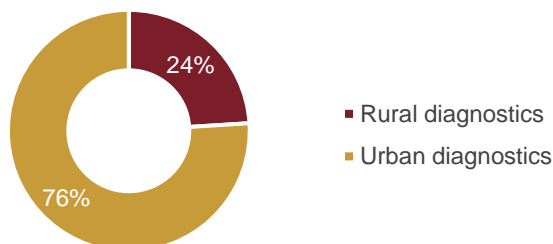
E: Estimated

Note: Urban centres are areas or towns with a municipality, corporation, cantonment board, notified town area committee, and so on. Urban centres also fulfil the following criteria: a minimum population of 5,000, ~75% of the male population engaged in non-agricultural work, and a population density of at least 400 people per sq km. All areas that do not fulfil these requirements are classified as rural centres.

Source: Industry, CRISIL MI&A

Divergent diagnostic costs across rural and urban areas

In rural areas, the average diagnostic test cost for hospitalisation cases is Rs 1,889, markedly higher than the cost for non-hospitalisation cases, which is Rs 65. Conversely, urban areas exhibit higher diagnostic test costs, with hospitalisation cases averaging Rs 2,441 and non-hospitalisation cases averaging Rs 92.

Average price of diagnostic test (Rs)

	Hospitalisation case	Non-hospitalisation case
Rural	1,889	65
Urban	2,441	92

Source: NSS Report 75th Round, CRISIL MI&A

Share of diagnostic in average medical expenditure per hospitalisation case in India

The allocation of healthcare expenditure in India exhibits nuanced disparities between rural and urban areas, particularly concerning the share attributed to diagnostic services per hospitalisation case. Data reveals that diagnostics constitute a higher proportion, accounting for 11% of the average medical expenditure in rural regions, compared with 9% in urban locales. This disparity underscores several key factors influencing healthcare spending patterns.

In rural areas, limited access to comprehensive healthcare facilities prompts a heightened reliance on diagnostic tests to compensate for the absence of specialised medical services. Additionally, the prevalence of certain health conditions, combined with a lack of preventive care infrastructure in rural settings may necessitate more frequent diagnostic evaluations. Conversely, urban areas benefit from better-equipped healthcare facilities, potentially leading to lower diagnostic expenses relative to total medical expenditure. Addressing these discrepancies demands targeted interventions to enhance healthcare access and affordability, especially in rural regions, through initiatives aimed at strengthening healthcare infrastructure, improving diagnostic services and promoting preventive healthcare measures. Such efforts are crucial for ensuring equitable healthcare delivery and mitigating the financial burden on patients across diverse socio-economic contexts in India.

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Share of healthcare expenditure in rural and urban
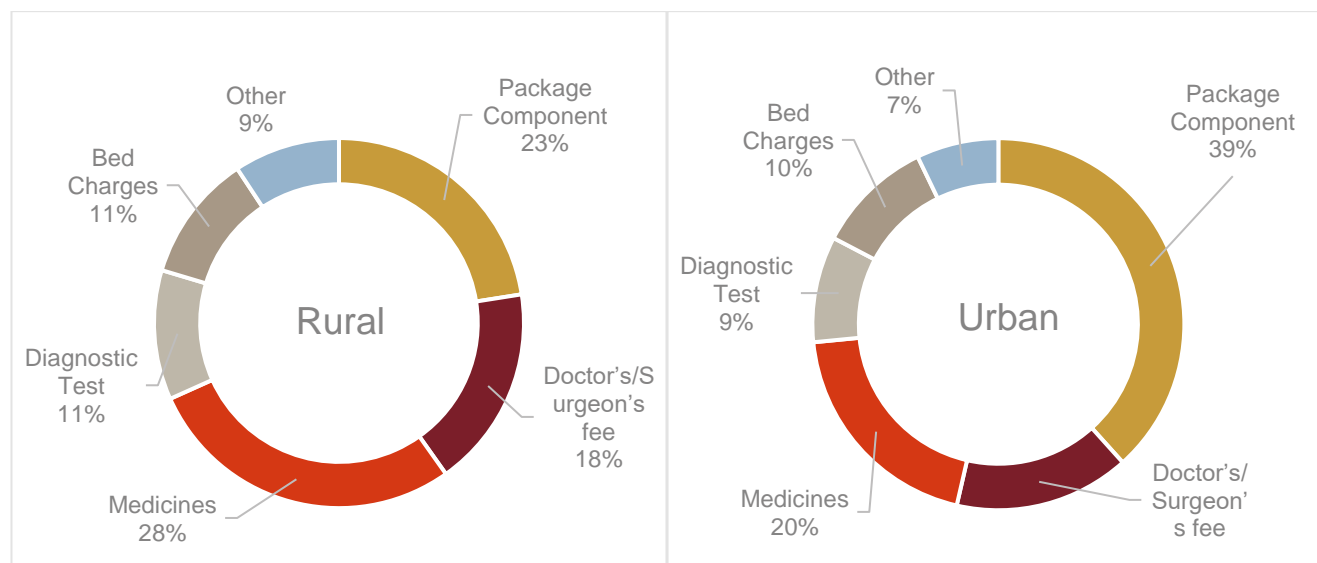
Source: NSS Report (75th round), CRISIL MI&A

Diagnostic services are the most evenly divided in terms of employment

Within the healthcare sector, diagnostic services stand out as one of the most evenly distributed areas in terms of employment. Diagnostic services typically require a diverse range of professionals working together in various capacities which includes radiologists, pathologists, laboratory technicians, medical technologists, and support staff such as administrative personnel. Diagnostic services play a critical role in the healthcare continuum, providing essential information for accurate diagnosis, treatment planning, and disease management. As a result, the demand for diagnostic services cuts across different medical specialties and healthcare settings, including hospitals, clinics, diagnostic laboratories and imaging centres. Employment within diagnostic services is distributed across multiple disciplines and levels of expertise, with each contributing to the overall functioning of the diagnostic process. For example, radiologists interpret medical images, pathologists analyse tissue samples, laboratory technicians perform diagnostic tests, and administrative staff manage patient records and schedules.

This diversity in employment reflects the collaborative nature of diagnostic services, where professionals from various backgrounds work together to deliver accurate and timely diagnostic information to support patient care. It also highlights the interdisciplinary nature of modern healthcare, emphasising the importance of teamwork and coordination in delivering high-quality diagnostic services to patients. Overall, the even distribution of employment within diagnostic services underscores its integral role within the healthcare sector and the diverse skill sets required to meet the diagnostic needs of patients effectively

According to data from the NSSO and National Health Workforce Account (NHWA), the healthcare professional pool in India in 2018 included ~1.16 million doctors, 2.34 million nurses/midwives, and 0.79 million traditional medicine professionals, primarily AYUSH practitioners. After adjusting for net migration, mortality and retirement, the actual stock of healthcare professionals in 2018 was estimated at 1.05 million doctors and 2.18 million nurses/midwives. However, the active healthcare workforce was substantially lower, with only 0.66 million doctors and 0.79 million nurses/midwives. Together, doctors and nurses/midwives accounted for ~45% of the total actual stock of healthcare professionals. The disparity between the stock of healthcare professionals and the active healthcare workforce was attributed to labour market attrition, with a significant proportion of qualified professionals not actively engaged in healthcare. Data from Public Labour Force Survey 2018–2019 revealed that ~4% of

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medical graduates and 11% of diploma holders in medicine/nursing were unemployed, while a considerable number were employed in non-health sectors. Alarmingly, around 20% of doctors and 30% of nurses reported being out of the labour force.

Healthcare workforce in India

	NHWA total production 2018 (million)	Actual number of healthcare professionals in 2018 (million)	Active healthcare workforce in 2019 (million)
Allopathic doctors	1.16	1.05	0.66
Nurses	2.34	2.18	0.79
AYUSH practitioners	0.79	0.76	0.25

Source: WHO, CRISIL MI&A

By 2030, number of doctors in the actual stock is projected to increase to ~1.51 million from 1.25 million in 2025. Concurrently, number of doctors in active healthcare workforce is expected to rise to 1.1 million from 0.87 million. Notably, the increase in the actual stock of doctors is anticipated to be more substantial (0.26 million) from 2025 to 2030 compared with the period until 2025, which saw a rise of only 0.17 million. Similarly, the increase in active healthcare workforce is projected to be higher from 2025 to 2030 as against 2020 to 2025. This growth is attributed to the establishment of new medical colleges in the country.

Estimated number of doctors (million) in actual stock and active healthcare workforce
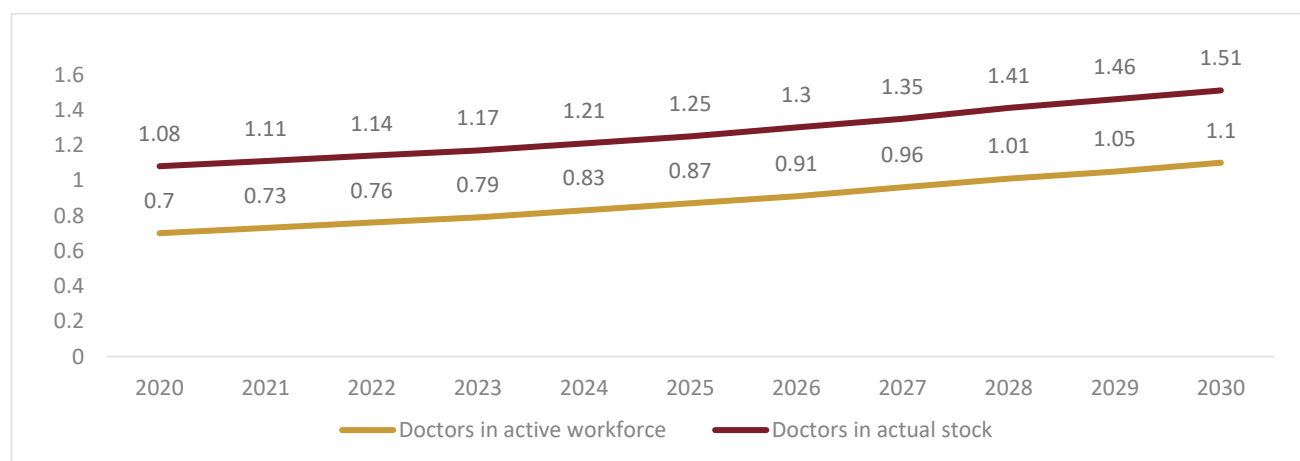
Source: WHO, CRISIL MI&A

Healthcare personnel shortages in India

India's healthcare personnel landscape presents a nuanced picture characterized by disparities in distribution and shortages in critical areas. While the country boasts a rich pool of medical professionals, including physicians, nurses, and allied health workers, the density per capita falls below the global average and lags significantly behind that of developed nations. This shortage, particularly pronounced in rural and underserved areas, underscores persistent challenges in ensuring widespread access to quality healthcare services. Efforts to address these gaps are underway, with initiatives aimed at bolstering training programs, enhancing infrastructure, and promoting innovative models of care delivery. However, the journey toward achieving equitable healthcare access for all remains an ongoing endeavor, requiring continued investment and strategic interventions to strengthen the healthcare workforce and improve health outcomes across the nation.

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Healthcare personnel: India vs other countries (latest as reported by each country)

Legend: ■ Physicians (per 10,000 population)   ■ Nurses (per 10,000 population)

Country	Physicians	Nurses
Russia	38	62
UK	32	92
US	36	119
Brazil	21	55
Malaysia	23	34
China	25	35
Thailand	9	31
Nepal	9	35
India	7	17
Indonesia	7	42
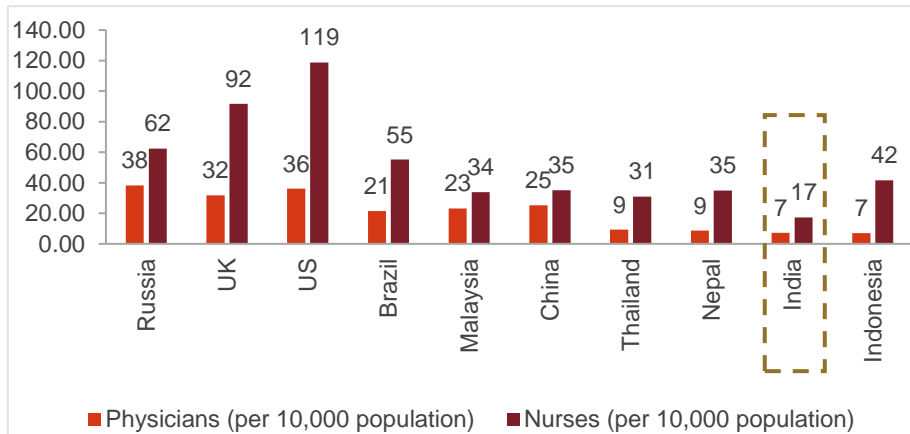
Paucity of healthcare personnel compounds the problem. At 7 physicians and 17 nursing personnel per 10,000 population as of CY20, India trails the global median of 17 physicians and 38 nursing personnel. India even lags developing countries such as Brazil (21 physicians, 55 nurses), Malaysia (23 physicians, 34 nurses) and other Southeast Asian countries.

Note: CY22 figure for UK, Indonesia; Physicians figure for the US is for CY21 and Nurses figure for CY22; CY21 figure for, Brazil, China, Nepal; Physicians figure for Malaysia is for CY21 and Nurses figure for CY19; Physicians figure for Thailand is for CY20 and Nurses figure for CY19; CY20 figures for India and Russia

Source: WHO, World Bank, CRISIL MI&A

Physicians (per 10,000 population)

World average*	India
~17	7

Nurses (per 10,000 population)

World average*	India
38	17

*Note: *World average as of CY22, India average as of CY20*
Source: WHO, World Bank, CRISIL MI&A

West Bengal leads in terms of absolute number of doctors as of CY 2020 for East India states, but lags behind in terms of doctor and nurse density per 10,000 population compared to states with more developed healthcare infrastructure

As of CY20, there were 1,300,290 doctors with recognised medical qualifications (under the IMC Act) registered with state medical councils or the Medical Council of India. Further, there were 2,474,319 registered nurses and registered midwives, 982,932 auxiliary nurse midwives and 57,122 lady healthcare visitors serving in the country as on December 31, 2021.

Maharashtra leads in terms of absolute number of registered doctors as of CY20 with 188,540 registered doctors. Among the eastern India states, West Bengal has the maximum number of registered doctors – 77,664 as of CY20. However, West Bengal had eight doctors per 10,000 population, lower than states with more developed healthcare infrastructure such as Andhra Pradesh, Kerala, Karnataka (~20 doctors per 10,000 population) and Tamil Nadu (~19 doctors per 10,000 population). Although, there is a significant presence of registered doctors in these states, a large presence is attributed to metropolitan areas, While Non-metropolitan areas face dearth of specialised medical professionals such as paediatricians, gynaecologists, surgeons, cardiologists, neurologists, rheumatologists, oncologists, haematologists and nephrologists.

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Number of doctors possessing recognised medical qualifications (under the IMC Act) per 10,000 population – CY 2020
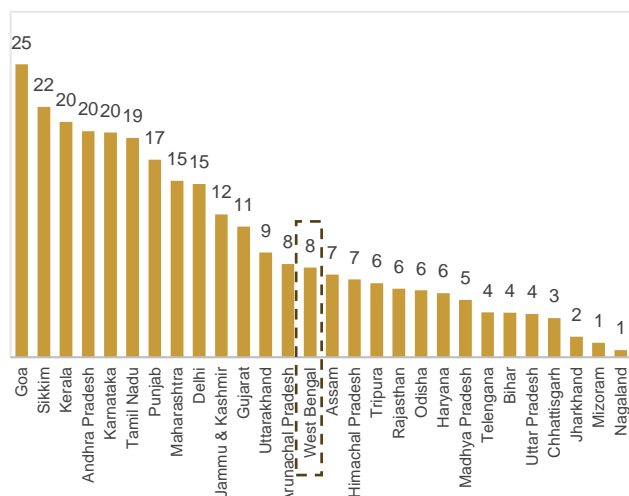
Number of registered nurses per 10,000 population – as on December 31, 2021
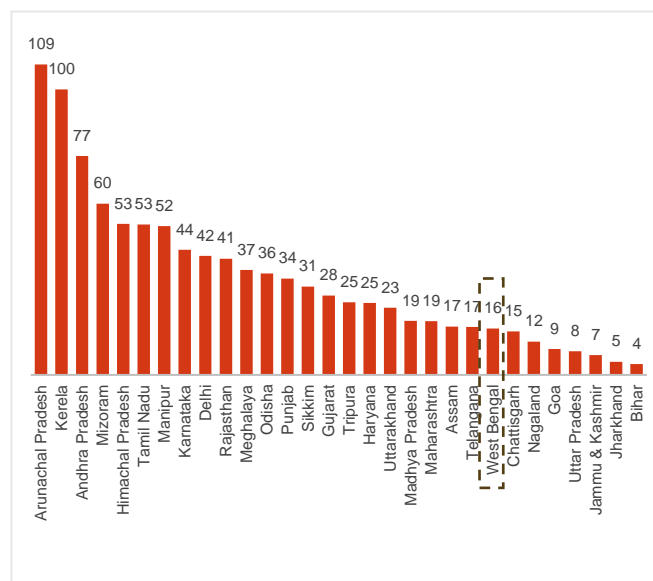
Note: 17 states under the non-special category given by the RBI (except Goa) along with our key states of study have been considered above. Amongst our key states, doctor numbers for Manipur and Meghalaya are not available, while nurse numbers for Nagaland are not available

For Nurse data, :

Data up to December 31, 2019, for the following states: Himachal Pradesh, Jharkhand, Karnataka, Madhya Pradesh, Punjab, Telangana, Uttar Pradesh

Data up to December 31, 2020, for the following states: Bihar, Maharashtra, Odisha, Rajasthan, Uttarakhand

Andaman and Nicobar is combined with Tamil Nadu; Lakshadweep combined with Kerala; Daman & Diu and Dadra Nagar Haveli combined with Gujarat

Source: National Health Profile 2022, CRISIL MI&A

Region wise doctor and nurse density

Region	States covered for doctors and nurses' data	Avg. doctors per 10,000 (CY20)	Avg. registered nurses per 10,000 (CY21)	Estimated bed density per 10,000 (CY20)
East India including Northeast	Bihar, Jharkhand, Odisha, West Bengal, Chhattisgarh, Sikkim, Arunachal Pradesh, Assam, Tripura, Mizoram, Nagaland**, Manipur**, Meghalaya**	5.2	14.4	7-8
North India	Jammu & Kashmir, Himachal Pradesh, Punjab, Uttarakhand, Uttar Pradesh, Haryana, Delhi	6.2	15.4	15-16
West India	Maharashtra, Gujarat, Rajasthan, Madhya Pradesh, Goa	10.0	25.4	10-11
South India	Andhra Pradesh, Karnataka, Tamil Nadu, Kerala, Telangana	17.3	56.4	26-27

*Note: 17 states under the non-special category given by the Reserve Bank of India (except Goa) along with our key states of study have been considered above. Amongst our key states, doctor numbers for Manipur and Meghalaya are not available, while nurse numbers for Nagaland are not available, *Nurse data for Nagaland is not available and hence is excluded from nurse density calculations, **doctor data for Manipur and Meghalaya is not available and is excluded for doctor density calculations*

For Nurse data :

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Data upto 31st December 2019 for the following states: Himachal Pradesh, Jharkhand, Karnataka, Madhya Pradesh, Punjab, Telangana, Uttar Pradesh

Data upto 31st December 2020 for the following states: Bihar, Maharashtra, Odisha, Rajasthan, Uttarakhand

Andaman Nicobar is included with Tamil Nadu; Lakshadweep included with Kerala; Daman & Diu and Dadra & Nagar Haveli is included with Gujarat

For bed density calculation, Chandigarh has been included in North India, Dadra & Nagar Haveli and Diu & Daman in West India, and Puducherry and Lakshadweep in South India.

Source: National Health Profile 2022, CRISIL MI&A

Region wise NABH Accredited Hospitals
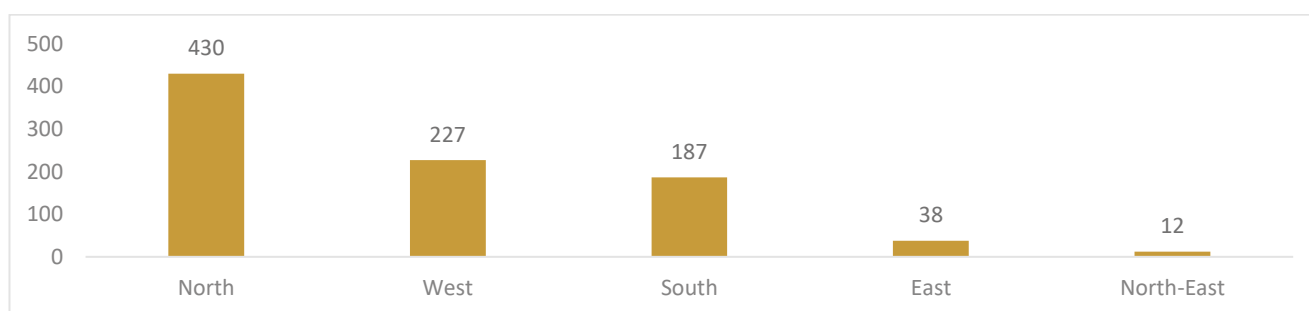
Note: Northeast includes states like Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura
East includes states like Bihar, Jharkhand, Odisha, West Bengal and Chhattisgarh
North includes states like Punjab, Uttarakhand, Uttar Pradesh, Haryana, Madhya Pradesh, Delhi, and Himachal Pradesh
West includes states like Maharashtra, Gujarat, Rajasthan, and Goa
South includes states like Andhra Pradesh, Karnataka, Tamil Nadu, Kerala, and Telangana
Source: NABH, CRISIL MI&A

East and North-East region which together comprises 13 states has a total of 50 NABH accredited hospitals, whereas the north region alone contributes to about 48% of the total NABH accredited hospitals in the country. The low number of NABH accredited hospitals in the east and north-east region is attributed to the lack of infrastructure and quality Healthcare which gives rise to a significant demand supply gap.

Private hospitals occupy higher share compared with government hospitals

In India, private hospitals have come to occupy a dominant share in the diagnostics industry, surpassing government hospitals. As of FY24, the share of private hospitals (in value terms) in the diagnostics segment stood at 68-73%.

One of the primary reasons for the dominance of private hospitals is their higher quality and accessibility. Private hospitals in India have often been associated with better infrastructure, modern medical equipment, and a higher standard of care compared with government hospitals. Patients seeking reliable services are drawn to private hospitals due to the perceived quality and accessibility of these facilities.

Private hospitals often specialise in certain medical fields such as cardiology and oncology. These specialised facilities attract patients with specific medical concerns, leading to a higher volume of patients seeking these services.

In addition, India being a popular destination for medical tourism, private hospitals playing a pivotal role in catering to international patients.

Thus, preference for private hospitals over government hospitals has led to a higher patient footfall in private hospitals, subsequently driving more demand for diagnostic services.

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Share of private and government hospitals in the diagnostics segment (%)

	FY18	FY24	FY28P
Private Hospitals	66%	68-73%	70-75%
Government Hospitals	34%	28-33%	25-30%

■ Government Hospitals ■ Private Hospitals
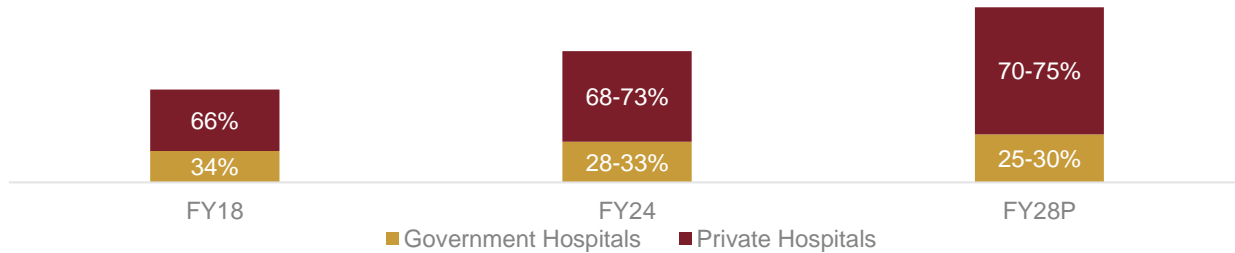
E: Estimated; P: Projected
Source: CRISIL MI&A

Preventive and wellness testing packages to gain traction

There has been a significant growth in the demand for preventive health check-ups in India in recent years and the Covid-19 pandemic has resulted in an increased awareness of self-testing, particularly in relation to preventive and wellness services. Mid-to-large sized diagnostic chains and hospital-based diagnostic centres are increasingly packaging and marketing their test menus in the form of preventive and wellness packages.

These health checkup packages help identify pre-existing diseases, or the likely risk from a particular disease before the actual symptom appears, helping individuals take corrective action before chronic conditions take hold.

Diagnostic companies offer such health checkup packages through corporate clients and market these directly through labs and collection centres. Most of the packages either specifically screen for a chronic disease or comprise a slew of tests to ascertain the overall health of an individual. Moreover, preventive and wellness tests consist of biochemistry tests to check an individual's risk to chronic diseases such as cardiovascular diseases and diabetes, among others.

The overall market for wellness and preventive diagnostics – which is ~11% of the total diagnostics segment as of FY24 – is expected to grow at a healthy rate of 16-18% between FY24 and FY28, led by rising disposable incomes, increasing urbanisation and awareness about prevention and wellness following Covid-19, etc.

Share of preventive and wellness segment in the Indian diagnostics market

FY24
11%
89%

FY28P
12-17%
83 - 88%

FY24-FY28P (CAGR)
Wellness and preventive:
16-18%

Rest of pathology segment:
7-9%

■ Wellness and preventive
■ Rest of the segment

E: Estimated; P: Projected

Consulting
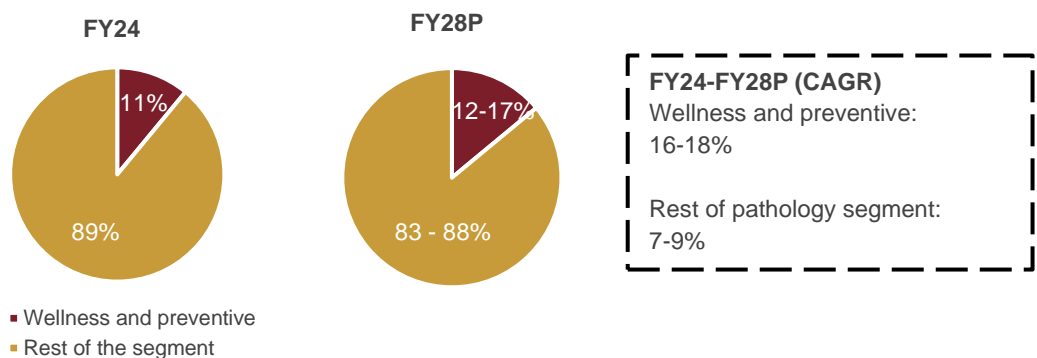
Radiology tests are at least two to three times more expensive than pathology tests

Radiology tests, such as X-rays, CT scans and MRIs are generally more expensive than pathology tests, due to complex and costly equipment, specialised training and expertise required. Also, Radiology equipment require extensive capital expenditure, it is viable only in case of adequate patient volume. Conversely, pathology tests analyse tissue samples or bodily fluids using simpler equipment, resulting in lower costs. Despite the expense, radiology tests provide detailed imaging crucial for diagnosing various medical conditions. However, for routine health check-ups, pathology tests offer convenience, accessibility and affordability. They analyse blood samples or bodily fluids, providing comprehensive insights into health parameters. Pathology tests are preferred for regular monitoring, enabling proactive health management, especially in resource-constrained settings.

Indicative test costs in pathology and radiology segments (2023)

Sr no.	Name of test	Indicative cost (Rs)	
		In private diagnostic centres	**PPP model**
Pathology tests			
1	Glucose test	150-200	25-40
2	HbA1c	500-550	75-105
3	Thyroid profile	500-550	120-165
4	Lipid profile	650-750	120-165
Radiology tests			
1	Sonography test	700- 1200	275-330
2	CT scan	2000-5000	525-2000
3	MRI scan	5000-10000	850-4550

Thyroid profile includes T3, T4, and TSH. Glucose test includes fasting and postprandial blood sugar
Source: CRISIL MI&A

Name of the Test		Description
Pathology tests		
1	Glucose test	• Glucose test is a type of blood test which measure the current level of glucose in the blood. The test involves a prick in the finger or blood drawn from a vein. Healthcare providers mainly use glucose test to screen for diabetes.
2	HbA1c	• HbA1c stands for Glycosylated Haemoglobin. It is a test which involves drawing a small amount of blood through the veins. HbA1c estimates the average level of glucose in the blood over the last 10-12 weeks.
3	Thyroid profile	• The thyroid is a tiny, butterfly-shaped gland located at the base of the front of the neck that is responsible for producing the hormones thyroxine(T4) and triiodothyronine(T3). These hormones have an impact on every facet of metabolism as well as the regulation of critical bodily functions such as heart rate and temperature. Thyroid hormones T2, T4 and TSH are included in the thyroid

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		profile test, which aids in assessing how well the thyroid gland functions within the body. This profile shows if the thyroid gland is under functioning, over functioning or functioning normally.
4	Lipid profile	• Lipid profile test often called the lipid panel, is a blood test that measures the quantity and kind of lipids, or fats, in the blood to determine a person's risk of developing cardiovascular disease.
Radiology tests		
1	Sonography test	• Sonography is a diagnostic medical test that produces images of the body's tissues, glands, organs and blood or fluid flow using high-frequency sound waves, also known as ultrasound waves. Sonography sends ultrasonic waves onto the skin's surface and detects the echo using a device known as a transducer. The ultrasonic waves are converted into a picture by a computer. A medical professional interprets the pictures to understand the nature of the ailment. A sonography test is mainly used to identify a variety of medical conditions such as pregnancy, kidney stones, Blood clots, tumours etc.
2	CT scan	• A Computerized tomography or CT scan is a kind of imaging that builds detailed images of the body using X-ray techniques. It then makes cross-sectional pictures, or slices of the body's soft tissues, blood arteries and bones using a computer. Compared to standard X-rays, CT scan images provide more information. CT scan images has variety of uses such as radiation treatments, planning of medical surgery, diagnosis of illness or injury etc.
3	MRI scan	• Magnetic Resonance Imagining scan or MRI scan is a non-invasive medical test that produces comprehensive images of practically every internal structure of the human body including the blood arteries, muscles, bones, and organs. MRI scanners use radio waves and a big magnet to create images of the body. Unlike X-rays, no ionizing radiation is generated during the MRI test. MRI scans is mainly used to diagnose medical conditions like, tumours, cancers, bone injuries etc.

Source: CRISIL MI&A

3.3 Key equipment cost

Type	Price (Rs million)	Description
Pathology equipment		
Biochemistry analyser	0.05-17.70	Two types of biochemistry analysers, i.e., semi-automatic and automatic, are commonly used. The former can perform 50-100 tests per hour, whereas the latter, 200-400 tests per hour. Biochemistry analysers perform routine (for glucose, cholesterol, etc) and specialised (for bilirubin, creatinine, calcium, magnesium, chloride, sodium and potassium) tests. Such tests help detect kidney, liver and bone diseases, thyroid disorders and tissue injuries
Immunology instrument	0.06-17.70	Used to diagnose hormonal disorders and infectious diseases such as malaria, dengue and influenza. Diagnostic centres choose machines according to their patient load and test volume
Haematology analyser	0.2-4.72	Determines red and white blood cell count, and haemoglobin, folic acid, serum and uric acid levels in blood, and helps detect liver and kidney diseases, and other ailments such as leukaemia, tuberculosis, malnutrition, hypothyroidism and cirrhosis
Microscope	0.03-5.31	Helps analyse abnormalities that are too fine for the naked human eye. Hence, it is an important instrument for diagnosis as well as monitoring of diseases

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Type	Price (Rs million)	Description
Radiology segment		
X-ray machine	0.2-11.20	Non-invasive instrument used to diagnose diseases or abnormal conditions such as fractures, as well as for periodic monitoring
Ultrasound machine	0.5-12.32	Comprises a console with a computer, a video display screen and a transducer that scans body parts
ECG machine	0.03-0.15	Measures abnormal rhythms of the heart, particularly those caused by damage to conductive tissues that carry electrical signals
CT scan	14-60	Also called computer axial tomography scans, used for diagnosing cancers of the liver, lungs and pancreas
MRI scan	40-180	Provides a good contrast between the different soft tissues of the body, and useful in imaging the brain, muscles and heart
PET-CT machine	70- 260	Creates dual images of the body, using both an X-ray CT image and a PET image. Diagnosis relies on the use of fludeoxyglucose 18F and helps pinpoint cancer in patients

Source: Industry, CRISIL MI&A

3.4 Indian diagnostic industry lacks stringent regulatory framework

The diagnostic industry is relatively under-regulated, compared with other sectors such as pharmaceuticals and hospitals. With the introduction of the list of essential diagnostic tests, prices of some tests could be subject to regulation.

Lack of comprehensive and stringent regulatory framework

The Indian diagnostic industry lacks a stringent regulatory framework, compared with other related sectors such as pharmaceuticals or hospitals, which are relatively more regulated.

The Clinical Establishments (Registration and Regulation) Act 2010 aims to bring all diagnostic centres and laboratories (labs) under its ambit their registration with the respective state council as clinical establishments. The Act, to be implemented through the National Council for Standards, also aims to impart guidance on the minimum standards of facilities and services, which should be provided by diagnostic centres and labs to improve public health.

Till date, the Act has been adopted by 11 states - Sikkim, Mizoram, Arunachal Pradesh, Himachal Pradesh, Uttar Pradesh, Bihar, Jharkhand, Rajasthan, Uttarakhand, Assam and Haryana and all Union Territories, except Delhi, since March 2012, however, they are yet to implement it. Uttar Pradesh, Rajasthan and Jharkhand have adopted the Act under Clause (1) of Article 252 of the Constitution and violation of any provision of this Act leads to monetary penalty.

Another major approval needed to set up a diagnostic centre is a licence from the municipal corporation under the Shops and Establishments Act, 1948. Diagnostic centres also have to register with the pollution control board that monitors regular and proper disposal of bio-medical waste.

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Radiology centres have to additionally adhere to regulations under the Pre-Conception and Pre-Natal Diagnostic Techniques for operating ultrasound machines. Centres also must adhere to the Bhabha Atomic Research Centre's (BARC's) guidelines for setting up CT, MRI and X-ray equipment.

Mandatory licences and regulations

Name of licenses and regulations
The Clinical Establishments (Registration and Regulation) Act, 2010 and rules made thereunder
The Pre-Conception and Pre-Natal Diagnostic Techniques (Prohibition of Sex Selection) Act, 1994 and rules made thereunder
The Atomic Energy Act, 1962
Biomedical Waste (Management and Handling) Rules, 1988, as amended up to date
Shop Establishment Licence

The Indian Council of Medical Research published a list of national essential diagnostics list (NEDL) in 2019, after consultations with relevant industry players. The list includes in-vitro and radiology tests for communicable and non-communicable diseases. The tests included in the list would allow for price-capping under the entry level of treatment (village to a district hospital).

The NEDL has more tests than a similar list released by the WHO (includes ~58 tests at primary health centres and 55 at reference laboratories). The list mentions ~117 general laboratory tests, 29 disease specific tests (HIV, hepatitis and tuberculosis) and 24 imaging tests.

Voluntary accreditations

Additionally, diagnostic centres can obtain accreditation voluntarily wherein an authorised agency or organisation such as the National Accreditation Board for Testing and Calibration Laboratories (NABL) evaluates and recognises the diagnostic services according to a set of standards. NABL is the sole accreditation body with the criteria of assuring accuracy, reliability and conformity of the tests results. It is an autonomous body under the Ministry of Science and Technology and most large laboratories in India are accredited by NABL.

Other main accreditations include the College of American Pathologists (CAP) laboratory accreditation and ISO certification. The CAP is an internationally recognised programme that offers accreditation service to help laboratories obtain the ISO 15189 certification (for medical laboratories).

Accreditations

Accreditations
National Accreditation Board for Testing and Calibration Laboratories (NABL)
College of American Pathologists (CAP)

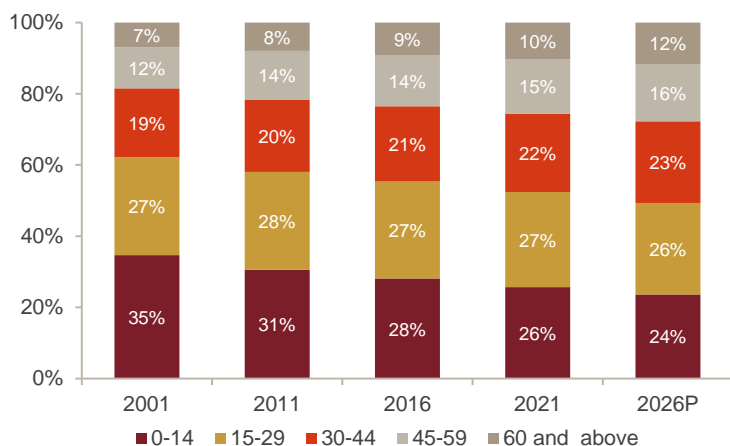## 3.5 Key growth drivers of the Indian diagnostics industry

Ageing population

India is experiencing a demographic shift, with more people entering the older age bracket. The share of the population in the 60 and above year age bracket, which was just 7% in 2001, is expected to increase to 12% by

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2026. This trend is driven by factors such as increased life expectancy, owing to improved healthcare infrastructure and advancements in medical care.

Break-up of India's population by age

	2001	2011	2016	2021	2026P
60 and above	7%	8%	9%	10%	12%
45-59	12%	14%	14%	15%	16%
30-44	19%	20%	21%	22%	23%
15-29	27%	28%	27%	27%	26%
0-14	35%	31%	28%	26%	24%

■0-14 ■15-29 ■30-44 ■45-59 ■60 and above

India's population of 60 and above years
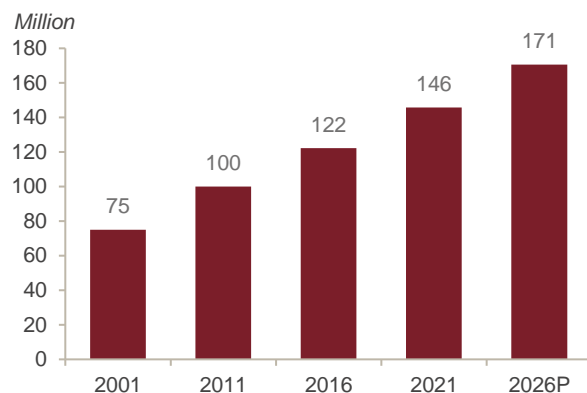
Million

2001	2011	2016	2021	2026P
75	100	122	146	171

Note: Percentages may not add up to 100 due to rounding off decimals

P: Projected

Source: World Population Prospects 2022, Department of Economic and Social Affairs Population Division, CRISIL MI&A

However, as people age, the risk of developing chronic and age-related illnesses, such as cardiovascular diseases, diabetes, cancer and neurodegenerative disorders, rises. Owing to increasing prevalence of age-related diseases, the need for regular health check-ups and the demand for specialised diagnostic services are expected to propel the growth of the diagnostics industry.

Government initiatives have significantly benefitted the diagnostics industry

The government has implemented several measures and policies, such as the Free Diagnostics Service Initiative under the NHM, to improve healthcare access and infrastructure and promote preventive care through diagnostic services. Additionally, the government has encouraged PPPs in the diagnostics space to leverage the expertise and resources of both the private and public segments. These partnerships have led to improvements in infrastructure, technology and service delivery, enabling better access to diagnostic services across the country, besides propelling industry growth.

Take the case of the Free Diagnostic Service Initiative, which is delivered through in-house, PPP and hybrid modes in states/ UTs. As of April 2024, the initiative had been implemented in 36 states/ UTs.

In fact, government initiatives, such as AB-PMJAY, Free Diagnostics Service Initiative, NUHM, NRHM and more have emerged as significant growth drivers for the Indian diagnostics industry.

Programmes such as PMJAY are expected to boost health insurance coverage in India, ensuring affordability in availing healthcare services, including diagnostics services. Furthermore, policies such as the NHM and Ayushman Bharat have focused on expanding healthcare infrastructure, promoting preventive care and increasing access to diagnostic services, particularly in rural and underserved areas.

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Amount approved towards record of proceedings (RoP) – Free Diagnostics Service Initiative (Rs billion)
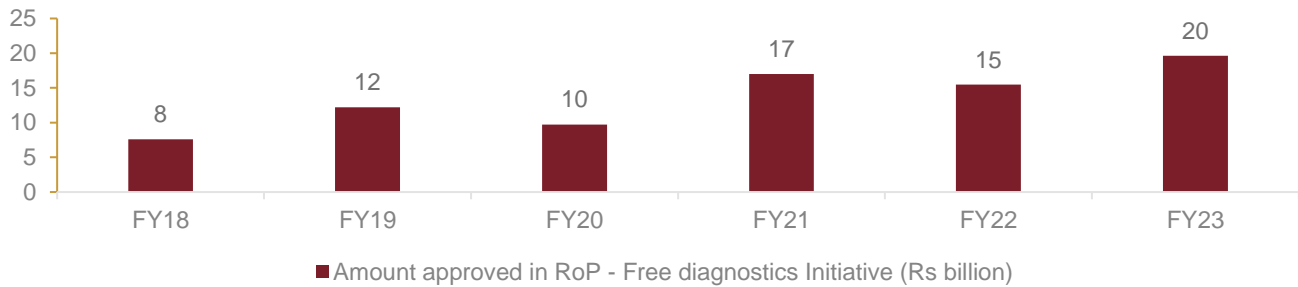
Source: Ministry of Health and Family Welfare (MoHFW) annual report, CRISIL MI&A

With improving life expectancy and changing demographic profile, healthcare services are a must

With improving life expectancy, the demographic profile of the country is also witnessing a change. As of 2011, nearly 8% of the Indian population was of 60 years or more, and this is expected to surge to 13% by 2026. However, the availability of a documented knowledge base concerning the healthcare needs of the elderly (aged 60 years or more) remains a challenge. Nevertheless, the higher vulnerability of this age group to health-related issues is an accepted fact.

Life expectancy (at birth) and infant mortality rate: India vs others (in years)
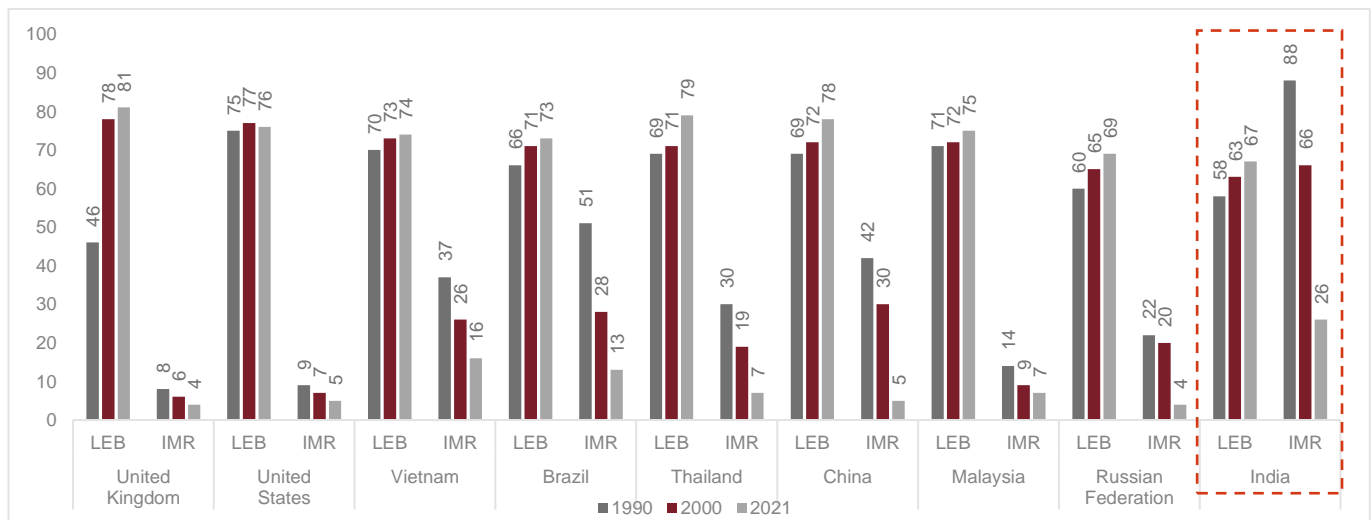
Note: LEB – life expectancy at birth; IMR – infant mortality rate (probability of dying by age one year per 1000 live births)
Source: World Bank, CRISIL MI&A

According to the Report on Status of Elderly in Select States of India, 2011, published by the United Nations Population Fund in November 2012, chronic ailments, such as arthritis, hypertension, diabetes, asthma, and heart diseases, were commonplace among the elderly, with ~66% of the respective population reporting at least one of these. In terms of gender-based tendencies, while men are more likely to suffer from heart, renal and skin diseases, women showed higher tendencies of contracting arthritis, hypertension and osteoporosis.

With the Indian population expected to grow to ~1.45 billion by 2026 and considering the above-mentioned factors, the need to ensure healthcare services to this vast populace is imperative. But this also provides a huge opportunity to expand into a space that bears huge potential.

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Rising income levels

India's per capita income, a broad indicator of living standards, rose to Rs 99,404 in FY23 from Rs 63,462 in FY12 at a CAGR of 4.2%. Growth was led by better job opportunities, propped up by overall economic growth. Additionally, population growth was stable at ~1% CAGR. Also, as per provisional estimates, the per capita net national income (constant prices) was estimated to have increased to Rs 106,744, thereby registering an on-year growth of ~7.4%.

Per capita NNI
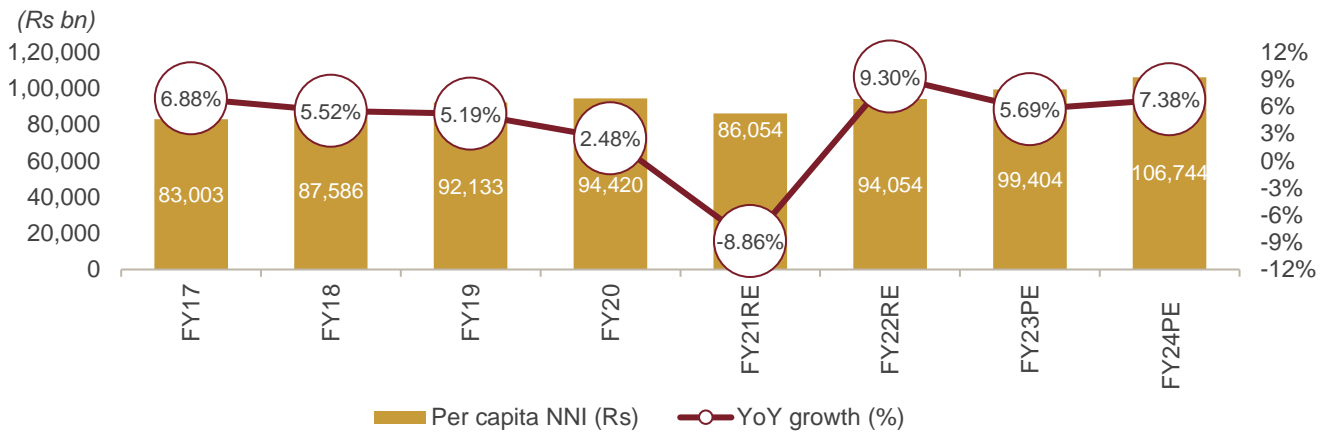
RE: Revised estimates, PE: Provisional estimates;

Source: Provisional Estimates of Annual National Income, 2022-23 and quarterly estimates of GDP for the fourth quarter of FY 2023, CSO, MoSPI, CRISIL MI&A

Budget allocation towards healthcare logged a Compounded Annual Growth Rate (CAGR) of ~10% between FY11 and FY25

The healthcare budget has seen increases on-year. Between FY11 and FY25, the budget for the Ministry of Health and Family Welfare (MoHFW) clocked a CAGR of ~10%. In recent years, the utilisation rate has been 100% or above, as has been the case since FY16. This, too, is a strong growth driver for the industry and particularly the PPP initiative from government so as to achieve the government's goal of providing healthcare services to all.

Budget estimates for MoHFW
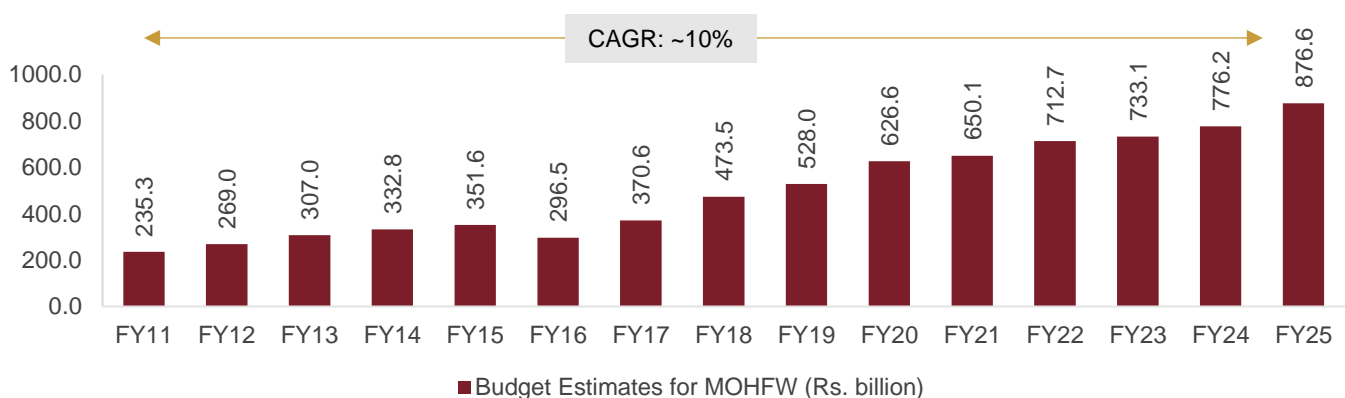
Source: Union Budgets, CRISIL MI&A

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Growing health awareness with subsiding Covid-19 infections

There has been a significant increase in health awareness and a growing emphasis on preventive healthcare in India, especially following the onset of Covid-19. The pandemic has heightened the importance of healthcare, including preventive care, such as early detection and regular health check-ups. This has increased the importance of diagnostic services, further driving demand for a wide range of diagnostic tests.

Various awareness campaigns organised by the government are also increasing health awareness, thereby driving the demand for diagnostics services.

Increased health insurance penetration

The number of individuals covered under health insurance crossed 550 million in FY23 versus 482 million in FY18. Furthermore, health insurance penetration in the country has continuously increased, covering 38% of population as of FY23.

Population-wise distribution of various insurance businesses

(million)

	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Government sponsored schemes	161	149	155	214	273	335	359	357	362	343	307	297
Group (other than Govt business)	30	34	34	48	57	71	89	73	94	119	162	199
Individual business	21	24	27	25	29	32	33	42	43	53	52	53
Coverage (RHS)	17%	17%	17%	23%	28%	34%	37%	36%	37%	38%	38%	38%
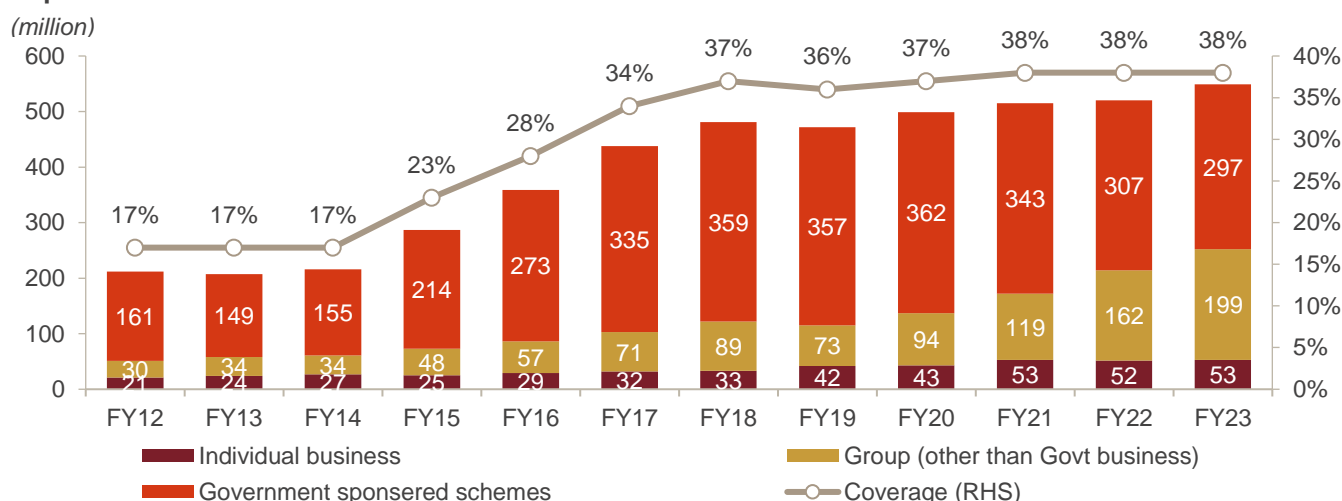
Source: Insurance Regulatory & Development Authority of India report 22-23

As health insurance provides financial protection to individuals and families against healthcare expenses, including diagnostic tests, they are more likely to seek necessary diagnostic services. With individuals not having to resort to out-of-pocket expenses, affordability of diagnostics services will increase. This will encourage individuals to undergo regular health check-ups, preventive screenings and specialised diagnostic tests, thereby driving demand for diagnostic services.

Non-Communicable Diseases (NCDs) boost demand for diagnostics services

India is currently undergoing a significant transition in disease pattern, characterised by the rising prevalence of NCDs, such as cardiovascular diseases, diabetes, cancer and respiratory disorders.

In fact, NCDs are emerging as the primary contributor to the country's disease burden, accounting for 59% of DALYs in India in 2019 versus 36% in 2000. Moreover, the share of NCDs in death is also increasing, with NCDs expected to comprise ~72% share of total deaths by FY30.

This can be attributed to factors such as an ageing population and a more sedentary lifestyle. Hence, given the increasing prevalence of NCDs, and the need for early detection and effective management, demand for diagnostic services is anticipated to grow significantly. Additionally, the changing disease profile has led to a shift in healthcare priorities, with increased focus on preventive healthcare, early detection and disease management. This, in turn, is

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expected to translate into higher demand for diagnostic services, including routine check-ups, screenings and specialised tests.

Causes of death in India
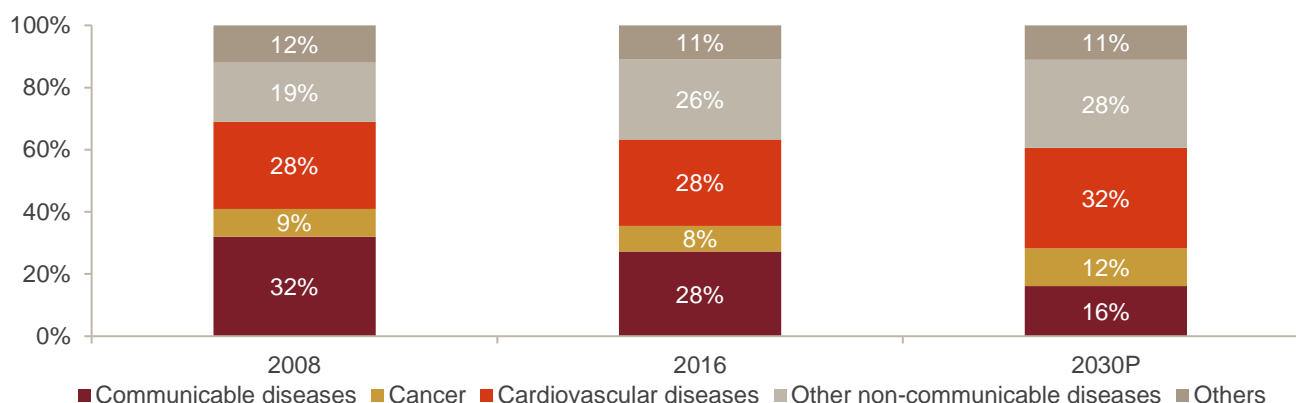
Note: Percentages may not add up to 100 due to rounding off decimals
P: Projected
Source: WHO Global Burden of Disease, India: Health of the Nation's States, CRISIL MI&A

Under-penetration of non-metro regions provides growth opportunity

As of FY24, diagnostic test penetration in India was 600-650 tests per 1,000 population. Bifurcating the numbers, metro regions had a penetration of 1,500-2,000 tests per 1,000 population, whereas in non-metro regions, it was 550-600 tests. However, non-metro regions accounted for 85-90% share of the total tests.

Hence, this under-penetration in non-metro regions provides a growth opportunity for the industry.

Region	Tests per 1,000 population in FY24 (estimates)
Metro	**1,500 – 2,000**
Non-metro	**550 – 600**
India	**600 – 650**

Source: Health Management Information System, CRISIL MI&A

3.6 Key risk factors for the Indian diagnostics industry

Shortage of skilled labour

There is considerable shortage of full-time doctors and staff in the diagnostics industry, due to which training and retention of seasoned employees has become critical for players. The situation is more critical for standalone diagnostic centres, which may not be able to employ well-trained lab technicians and pathologists, thereby affecting the quality of outcomes. This is essential, as accredited labs must mandatorily employ a full-time lab technician/phlebotomist and a radiologist.

High cost of equipment

Diagnostic centres must constantly upgrade their technology to stay ahead of the competition and provide precise results. These upgrades not only involve significant capital investment, but also incur maintenance cost and require

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trained technicians, leading to higher overall cost. Furthermore, the capital intensity is higher for advanced radiology and molecular diagnostics, which require high-end equipment.

Due to the capital-intensive nature of the equipment, large diagnostic chains are inclining towards the reagent-purchase model. In this model, diagnostic companies usually install the equipment on rent, provided they purchase reagents from the manufacturer for a certain period or agree to pay the manufacturer a specified price per test conducted.

Intense competition due to large number of players

The diagnostics industry is highly fragmented, with standalone players comprising the major share of the market as there are minimal entry barriers. That said, national diagnostics chains and hospitals are growing through the inorganic route, such as mergers and acquisitions of smaller players. But the diagnostic chains face competition among themselves as well, in terms of patient sample volumes and aggressive pricing of tests, thereby impacting their profitability. However, despite growing competition and undercutting of prices to gain market share, consolidation in the sector would bode well from the quality and standardisation perspective.

Geographical concentration makes diagnostics chains susceptible to local demand-supply dynamics

Majorly all the labs are concentrated in urban areas, which may lead to untapped demand in rural areas. Furthermore, many small diagnostic chains operating multiple labs and concentrated in a particular area or region are also susceptible to the demand-supply dynamics of that area.

Steep discounts by online players

Online players offering steep discounts pose a significant risk to the Indian diagnostic industry. These discounts may lead to price erosion and margin compression for traditional brick-and-mortar diagnostic centres. Moreover, such aggressive pricing strategies could disrupt the market equilibrium and affect the profitability of established diagnostic players. Additionally, reliance on online platforms may compromise quality assurance and patient safety standards, thereby eroding consumer trust in the overall diagnostic industry. Furthermore, regulatory challenges and uncertainties surrounding online diagnostic services could exacerbate risks associated with compliance and legal implications. Recently, online players have been reducing discounts, however, the prevalence of steep discounts by online players still presents a notable risk to the stability and sustainability of the Indian diagnostic industry.

Price capping

With the adoption of National Essential Diagnostic List (NEDL) in India in 2019, the regulatory risk in terms of price capping may pose a threat to the existing diagnostic players. The NEDL builds upon the free diagnostic service initiatives of the Ministry of Health and Family Welfare (MoHFW). Under this initiative, the National Health Mission (NHM) is supporting all states in providing essential laboratory and radiology test at their facilities, free of cost. Currently the initiative is limited to public health facilities, but there is a chance that the initiative in order to reach a wider audience may cap the test price at private facilities as well.

Limited infrastructure

The final phase in the diagnostic process is transporting or distributing test results to patients. Smooth last-mile delivery of this diagnostic service is often hindered by the lack of infrastructure. The diagnostic players face significant challenges due to India's poor connectivity and extensive terrain which causes delays in the delivery of test results. It is further exasperated due to erratic traffic in metropolitan regions.

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3.7 Key success factors for the diagnostics industry

The success of a diagnostic centre depends on multiple factors. In the long term, a centre or chain is recognised for its brand name, gained through consistently providing high quality and accurate test results, along with strong doctor referral network, robust logistics network, and expanded customer reach.

Comprehensive test menu

A comprehensive test menu serves as a pivotal success factor within the diagnostics industry, as it allows thorough examination of a wide range of medical conditions under one roof, thereby offering additional convenience to patients as well as healthcare professionals, and improving the overall customer experience. Offering specialised test menus also builds trust among healthcare professionals and patients, as providing these tests requires substantial investment in equipment, adherence to stringent quality standards, as well as concerted research and development efforts.

Pan-India presence

Establishing a pan-India presence is pivotal for the success of the diagnostics industry, as it directly improves accessibility to diagnostic services. Furthermore, pan-India presence also provides diagnostic providers with larger patient pool and network of healthcare professionals, thereby accelerating their growth opportunities. Additionally, pan-India presence also helps in winning confidence and trust of patients as well as healthcare providers.

Brand name and reach

Building a strong brand presence in East India demands a focused approach towards crafting a distinct brand identity, penetrating the market effectively, and fostering enduring customer loyalty. This involves consistent messaging, impactful marketing strategies, and consistently delivering exceptional service quality. By engaging in targeted marketing campaigns and actively participating in community initiatives, companies can solidify their brand recognition within the region. Moreover, expanding reach necessitates strategic expansion into key urban and rural areas, forming beneficial partnerships, and adapting distribution channels to suit local preferences. Prioritising brand development and expansive reach allows diagnostic companies to instill trust, cultivate loyalty, and establish a recognisable presence among consumers and healthcare professionals, ultimately driving market growth and maintaining a competitive edge.

Strong legacy of trust with doctors and regional know-how

Trust of healthcare professionals such as doctors is an important parameter for success in the diagnostics industry as healthcare professionals are major influencers for patients, especially in specialised test segment. Factors such as prior experience in diagnostics industry, reliable test results, NABL accreditation, comprehensive test offerings, and good customer experience are important in developing trust of healthcare providers as well as customers. Additionally, a strategic focus on regional know-how and penetration can further enhance success. By understanding the unique healthcare needs and cultural nuances of specific regions, diagnostic companies can tailor their offerings, entrench with clients, and capitalize on opportunities for growth in under-penetrated markets. This targeted approach not only strengthens client relationships but also unlocks untapped market potential, contributing to overall success in the industry.

Multiple channels

Diversifying distribution channels is essential to cater to the diverse needs and preferences of patients. Diagnostic companies should leverage various platforms such as online portals, walk-in clinics, mobile units, and partnerships

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with healthcare providers to reach a broader audience. This multi-channel approach enhances convenience for patients, making diagnostic services more accessible and increasing customer engagement.

Robust logistics network

Efficient logistics play a pivotal role for diagnostic firms operating in East India, considering the region's diverse geography and infrastructure limitations. Establishing a robust logistics network requires careful planning, investment in transportation infrastructure, and integration of technology to streamline operations. From efficient sample collection to prompt result delivery, optimising logistical processes ensures reliable and timely service provision. Employing technologies such as GPS tracking, route optimisation software, and real-time monitoring enhances operational efficiency and minimises delays. Additionally, addressing last-mile connectivity challenges in remote areas is essential for comprehensive market coverage. By prioritizing logistics excellence, diagnostic companies can elevate customer satisfaction, optimize resource allocation, and gain a competitive advantage in the dynamic East Indian market.

Shorter Turnaround time (TAT)

Shorter TAT for test results is a crucial determinant of success in the diagnostics industry, especially in the routine tests segment. Patients as well as healthcare providers prefer diagnostic centres that can provide rapid results without compromising on accuracy, as they help in timely diagnosis of abnormalities/diseases. For the same reason, many diagnostic players are setting up STAT (short turnaround time) labs to reduce their turnaround time without compromising on the accuracy, thereby enhancing the holistic customer experience.

Omni-channel presence

Omni-channel presence provides more convenience and accessibility to customers, by allowing them to choose their preferred channel to book appointments, receive test results, and access other services, irrespective of their location or time constraints. For the same purpose, diagnostic providers are increasingly integrating online as well as offline channels, to facilitate convenient scheduling and seamless access to diagnostic services. Diagnostic providers are also providing facility of home collection of samples as well as delivery of digital reports through online platforms, such as websites and mobile applications, to enhance the overall accessibility and customer experience. This omni-channel approach also fosters increased patient engagement through additional touchpoints, thereby providing competitive advantage to the diagnostic providers.

Additionally, diagnostics chains with an established presence across various channels, including hospitals, online platforms, and retail outlets are better positioned to provide more convenience & flexibility to their customers.

Captive hospital diagnostic network

Collaborating with hospitals to establish captive diagnostic networks offers numerous benefits. By integrating diagnostic facilities within hospitals, companies can streamline patientcare pathways, improve coordination between healthcare providers, and enhance the overall patient experience. Additionally, a captive hospital diagnostic network ensures a steady flow of referrals, boosting patient volume and revenue generation for diagnostic centres.

Affordable price points

Developing a competitive edge in the east Indian diagnostic industry involves a nuanced approach to pricing strategies. Conducting thorough market research enables companies to understand pricing dynamics and competitive positioning. By optimising internal processes and supply chain management, firms can offer competitive pricing without compromising on service quality. Additionally, implementing value-based pricing models

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allows for differentiation based on the unique benefits and features of diagnostic services. Adapting pricing strategies to cater to diverse customer segments ensures accessibility and affordability while maintaining profitability. Through a balanced approach to pricing, diagnostic companies can effectively capture market share, meet customer expectations, and sustain long-term growth in east India.

Quality and accuracy of tests

The quality and accuracy of diagnostic tests are paramount in determining the success of the diagnostics industry as customers, including healthcare providers and patients, rely on the results of these tests for critical medical decisions and treatment plans. One key success factor is implementing rigorous quality control measures throughout the testing process. Furthermore, diagnostic companies must also invest in state-of-the-art equipment, employ highly trained personnel, and adhere to standardised protocols to minimise errors and variability.

National Accreditation Board for Testing and Calibration Laboratories (NABL) accreditation

The National Accreditation Board for Testing and Calibration Laboratories (NABL) accreditation is a key success factor for the diagnostics industry as it signifies adherence to proper standards and instils confidence among healthcare providers as well as patients regarding the reliability of the diagnostic services offered. Moreover, NABL accreditation helps in collaborations with healthcare institutions, research organisations, and corporate clients. As of February 2024, there were total 2,147 accredited labs in India.

Regionwise NABL labs

Region	NABL Lab	Share (%)
North	548	26%
South	679	32%
East including Northeast	365	17%
West	555	26%
Total	2,147	

Note: Percentages may not add up to 100 due to rounding off decimals

East including Northeast region is defined as: Bihar, Jharkhand, Odisha, West Bengal, Chhattisgarh, Sikkim, Arunachal Pradesh, Assam, Tripura, Mizoram, Nagaland, Manipur, Meghalaya

North region is defined as: J&K, Himachal Pradesh, Punjab, Chandigarh, Uttarakhand, Haryana, Delhi and Uttar Pradesh

West region is defined as: Rajasthan, Madhya Pradesh, Gujarat, Daman & Diu, Dadra & Nagar Haveli, Maharashtra and Goa

South region is defined as: Andhra Pradesh, Karnataka, Lakshadweep, Kerala, Tamil Nadu, Telangana, Puducherry, Andaman & Nicobar

Source: NABL; CRISIL MI&A

Location of diagnostic centres

The location of the lab has several important implications for the efficiency, accessibility and competitiveness of diagnostic services. Proximity to healthcare providers and patients is crucial since having a lab in close proximity to hospitals, clinics, and healthcare facilities not only reduces transportation time and enables faster delivery of samples for testing, but also increases the potential customer base and market reach. It also allows for easier collaboration and partnerships with local healthcare facilities, enabling the company to establish strong relationships and secure contracts for diagnostic services.

Furthermore, the location of the lab impacts the logistics and supply chain management of diagnostic materials. A central location allows for streamlined transportation routes, reduces costs and minimises the risk of sample

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degradation or loss during transit. It also facilitates efficient procurement and distribution of testing supplies and equipment, ensuring smooth operations and timely delivery.

Underpenetrated healthcare

Identifying and targeting underpenetrated segments of the healthcare market in east India presents significant growth opportunities for diagnostic firms. This involves conducting thorough market research to identify areas with a shortage of healthcare facilities, professionals, or diagnostic services. By strategically allocating resources and implementing targeted marketing and outreach initiatives, companies can raise awareness and expand access to diagnostic services in underserved communities. Collaborating with local healthcare providers, government agencies, and community organizations allows firms to tailor their services to meet the specific needs and preferences of the target market. Additionally, engaging in community health programs and educational initiatives fosters trust and strengthens relationships with the local population. By prioritising the underpenetrated healthcare market, diagnostic companies can address the unmet requirement, expand their customer base, and contribute to improving healthcare access and outcomes in east India.

3.8 Recent trends in the diagnostics industry

Adoption of technology in the diagnostics industry (in testing and delivery)

Post-Covid-19, customers are expecting more convenience in terms of home collection, digital ecosystem and shorter TAT. As a result, there is an increasing shift towards integrating cutting-edge technology in both testing and service delivery to enhance accuracy, decrease TAT and provide better customer experience. The diagnostic players are leveraging technology and digital media to enable data-driven business decisions to enhance performance marketing, improve customer experience through operational agility and customer loyalty, open up new channels and aid in hyper local digital campaigns

Inclusion of Diagnostic tests in corporate health insurance plans

Corporates have increasingly recognized the importance of diagnostic tests in preventive healthcare and have started including them in their insurance plans. Many companies now offer comprehensive health insurance policies that cover a wide range of test involving radiology and pathology. The companies have recognised that focusing on preventive healthcare leads to the overall wellbeing of the employee thereby reducing absenteeism. Some companies have thereby partnered with diagnostic firms to provide diagnostic services either for free or at subsidised rates.

Optimised disease detection through AI-assisted pathology and advanced robotics

Newer models are using disease-detection algorithms and detection processes through AI and ML-assisted pathology. For example, to diagnose diabetes retinopathy – a serious eye condition which can cause blindness in people who are diabetic – a doctor needs to study the patients' retina. However, there are several software products available that can help diagnose diabetes retinopathy through images, which will improve TAT as well as decrease dependence on trained doctors.

Furthermore, the use of technologies, such as telepathology, which use telecommunications technology to facilitate the transfer of image-rich pathology data between distant locations for diagnosis, education, and research. Wearable biosensors, which can detect and analyse data to give information on the patients' heart rate, blood pressure, blood sugar, and hormone levels, are also increasingly being used. Additionally, mobile health (mHealth) is gaining popularity. The term is typically associated with using mobile communication devices, such as mobile phones, tablet computers or personal digital assistant, for availing healthcare services and information. The

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mHealth field has emerged as a sub-segment of eHealth, which can be defined as the use of information and communication technology, such as computers, mobile phones, communications satellite and patient monitors, for health services and information.

Digital transformation in the industry

The industry is also transforming digitally on the operational front. For instance, before Covid-19, customers expected a physical copy of their reports, which not only led to increased TAT and costs, but was also not a sustainable practice. In addition, it has also altered customer preferences, including expectations in relation to convenience, safety, home services, digital payments and quicker TAT. However, post Covid-19, most of the big diagnostic chains have digital platforms that not only provide online appointment scheduling but also access to digital test results, thereby elevating the overall patient experience. Also, intensifying competition has prompted industry players to adopt various techniques to differentiate themselves in terms of bandwidth, such as providing home pick-up and point-of-contact testing.

Furthermore, labs have started using platforms such as electronic health record (EHR) platforms to centralise and manage patient data efficiently since these systems facilitate seamless data exchange between various departments. This enables a smoother flow of information throughout the diagnostic process. Additionally, prominent diagnostic players are also leveraging technology and digital media to enable data-driven business decisions to enhance performance marketing, improve customer experience through operational agility and customer loyalty, open new revenue channels, and aid in hyper-local digital campaigns.

Sustainable practices

The healthcare sector, including the diagnostics segment, has considerable environmental footprint and high-water consumption. Hence, the diagnostics industry is actively embracing sustainable practices, and shifting towards more eco-friendly measures to reduce its ecological footprint. For example, efforts to minimise single-use plastic waste or replace glass with plastic are becoming increasingly popular in the diagnostics industry. Furthermore, many diagnostics centres have stopped giving physical copies of test results, which not only helps save paper, but also helps to control the carbon footprint in the supply chain.

Additionally, some laboratories are exploring renewable energy sources and adopting greener technologies to power their operations. By incorporating sustainable practices, the diagnostics industry is aligning itself with global efforts to combat climate change and protect the environment.

Advanced tests offerings

Technology adoption has accelerated the development of specialised tests. For example, genetic and genomic testing, facilitated by next-generation sequencing (NGS) technologies, has revolutionised genetic analysis, enabling the identification of specific genetic variations associated with various diseases. Additionally, liquid/ fluid biopsies have also been made possible by advancements in technology. Liquid biopsies are increasingly being used for molecular profiling of tumours as well as for facilitating a precision medicine treatment approach.

Integrated Offerings

An emerging trend in the diagnostic industry particularly for diagnostic companies, is the strategic integration of radiology and pathology services. This trend reflects a proactive approach by companies to enhance their service offerings and stay ahead in the competitive market landscape. By combining radiology and pathology expertise, diagnostic companies can provide comprehensive diagnostic solutions that satisfy the ever changing needs of the patients and healthcare providers. Key drivers of this trend include advancements in technology, such as digital pathology platforms and AI-powered imaging solutions, which enable seamless integration and analysis of data across radiology and pathology.

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Consolidation in the industry with larger players acquiring standalone entities and expanding geographic presence through acquisition

The diagnostics industry has been consolidating, with large diagnostic chains acquiring standalone diagnostic centres and regional diagnostic chains. However, large corporations and pharma companies are foraying into the diagnostics industry owing to low entry barriers. For example, Adani Enterprises is foraying into this space through its subsidiary Adani Heath Ventures. In 2022, pharma major Lupin and Torrent Pharma entered the diagnostics through Lupin Diagnostics and Torrent Diagnostics Pvt Ltd, respectively. Emergence of these players has intensified the competition in the industry, which is expected to put more price pressure on the diagnostics industry, especially in the routine and wellness tests segment.

Nonetheless, as of FY23, standalone players accounted for 42-46% of the total diagnostics industry revenue and diagnostic chains, 16-20%. However, deepening penetration of national diagnostic chains, increasing adoption of specialised tests and diverse test menu offered by diagnostic chains provide an opportunity for faster consolidation in the diagnostics industry.

Increasing role of diagnostics in preventive and targeted medicine research

Diagnostics have become the centre of patient care and may gain prominence as genomics-based diagnostics pave the way for targeted therapy and personalised medicine. Earlier, the diagnostics industry was mainly confined to the diagnosis of diseases or conditions after the symptoms surface. However, owing to notable advances in technology, the diagnostics industry is playing a significant role in preventive as well as targeted medicines.

One of the most noteworthy changes is the rise of personalised medicine, enabled by cutting-edge technologies, such as genomic sequencing. Genomic sequencing allows analyses of the genetic make-up of individuals and early prediction of diseases, which can help provide personalised treatment for patients. Moreover, individuals are increasingly undergoing next generation tests before marriage to gain a deeper understanding of their genomic make-up and how it may impact the health of their future offspring. This growing emphasis on pre-emptively identifying and preventing genetic disorders in future children offers parents and their prospective offspring the possibility of a healthy and fulfilling life.

Additionally, strides are being made in biomarkers and liquid diagnostics, which are also contributing significantly to preventive wellness. Biomarkers have gained prominence in precision medicine, as they facilitate precise risk assessment and targeted therapies, ensuring that treatments are tailored to suit the patient's needs. Similarly, liquid biopsy is a significant advancement in diagnostic capabilities and a quicker and minimally invasive test for detecting cancer cells. It can also complement tissue biopsy by capturing intra-tumour and intra-patient heterogeneity.

Furthermore, continuous improvements are being made in point-of-care diagnostics and digital health technologies to provide more portable testing kits to enhance the accessibility and convenience of patients without compromising on the accuracy of results. In conclusion, the diagnostics has evolved into a critical pillar of preventive and targeted medicine research. As this field continues to evolve, diagnostics will play a prominent role in shaping preventive and targeted medicine, ultimately improving patients' lives.

Research & Development (R&D) in diagnostics

The healthcare industry is expected to focus more on treating illness to promoting wellness, prioritising diagnosis and delivering care at the patient's home rather than in a healthcare facility, which will not only help increase the penetration of diagnostics services but will also facilitate R&D.

The domestic diagnostics industry has been witnessing significant R&D to advance healthcare diagnostics and improve patient outcomes through advancements in next generation diagnostics, including genome diagnostics,

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point-of-care testing, telemedicine and remote diagnostics. Companies and even countries are engaging in global as well as academic partnerships for R&D purposes. India has several bilateral science and technology cooperation agreements with other countries to facilitate cooperation in biomedical research. For example, the Indo-US memorandum of understanding (MoU) for Cooperation on Cancer Research Prevention Control and Management was signed in June 2015 for establishment of a general framework of collaboration for promoting and conducting high-quality research to strengthen the evidence base necessary for cancer prevention, treatment and management.

Furthermore, focused efforts are also being made for advancements in point-of-care testing through R&D as it results in rapid and on-the-spot diagnosis, thereby increasing accessibility in remote areas, where diagnostic services are still under-penetrated. Currently, metro regions have a penetration level of 1,500-2,000 tests per 1,000 people while in non-metro regions, it is only 550-600 tests per 1,000 people. However, non-metro regions account for 85-90% of the total tests. This signifies the under-penetration of diagnostic services in the non-metro regions of India and need for point-of-care testing.

Molecular diagnostics is another area that is seeing significant R&D. Molecular diagnostics involves diagnosing and monitoring of diseases, identifying risks and determining optimal therapeutic interventions through analyses of biological markers in the genome and proteome of an individual's genetic code, elucidating how their cells express genes as proteins.

Furthermore, diagnostic companies are actively exploring the integration of AI and ML into diagnostic processes. These advanced technologies have the capability to analyse extensive datasets, such as medical images and patient records, leading to improved diagnostic accuracy, enhanced operational efficiency and optimised decision-making in treatment.

Availability of diagnostics services increasing in remote areas

In FY23, only 24% of diagnostics revenue came from rural areas in India, though more than 70% of the population in the country resides in rural areas. This shows how under-penetrated diagnostics services are in rural India. However, owing to the multiple government initiatives, particularly focused on rural healthcare, such as the National Rural Health Mission and free services offered, accessibility to diagnostics in these areas has been improving steadily. As of October 2022, the government has implemented free diagnostics service initiatives implemented in 33 states/ Union Territories. Similarly, it has also started providing free teleradiology services in 13 states/ UTs under the PPP mode to increase accessibility of diagnostic services in rural India.

Furthermore, mobile medical units and teleconsultation services are being offered to improve access to healthcare, particularly in rural areas. Additionally, establishment of health and wellness centres across the country under the Ayushman Bharat scheme to provide comprehensive primary healthcare, including preventive healthcare, is improving the accessibility of healthcare in rural areas.

Overall, even though government efforts have improved the accessibility and quality of diagnostic services in the rural areas through various schemes, challenges persist in terms of lack of quality medical professionals, limited digital connectivity and limited awareness about healthcare services in rural India. Hence, various stakeholders (union government, state government, healthcare providers and prominent diagnostics chains) must collaborate to widen the coverage of diagnostic services in the rural areas.

Increasing focus on B2C segment

In the diagnostic services industry, the B2C segment (comprising direct customers/ patients who are the prime decision makers) provides higher brand visibility with repeat customer relationships. The B2B segment comprises healthcare institutions such as hospital establishment, doctors and corporate bodies, where the management of healthcare institutions and corporate bodies are the prime decision makers, and not the patients/ customers. It also

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includes diagnostics tests as part of clinical trials. The segment is instrumental in increasing access to hospital infrastructure, including established doctor network and higher volumes of tests. However, in recent years, the focus of diagnostic chains on the B2C segment has been increasing, driven by changing consumer preferences, technological advancements and a growing emphasis on preventive healthcare. Diagnostics chains are increasingly leveraging digital channels, especially post the Covid-19 pandemic, to enhance their B2C presence by offering customers more convenience through online test bookings, consultations and digital test results.

Prominent players in diagnostics are also acquiring relatively smaller players with good regional presence to increase their overall market share as well as their B2C footprint. For example, Metropolis Healthcare acquired Hitech Diagnostic Centre, to strengthen the B2C presence in southern India. Agilus Diagnostics Ltd also acquired the DDRC-SRL joint venture, to improve the B2C presence.

Diagnostic chains are also expanding their geographical footprint by adding more labs, test centres, customer touchpoints and patient service centres to increase accessibility of diagnostic services for potential customers.

Overall, prominent diagnostic chains are increasingly employing strategic initiatives to expand their B2C presence through wider geographical footprint and acquisitions. Furthermore, increasing awareness about preventive healthcare, prioritisation of timely diagnosis and the rising popularity of at-home/ point-of-care diagnostic tests are expected to further drive demand for diagnostic services from the B2C segment, further solidifying the diagnostics industry's focus on the segment. Moreover, there is a growing preference for evidence-based treatment and personalised medicine, which will expand the role of diagnostics in clinical decision-making.

Out-of-pocket expenses on diagnostics services in India a significant concern

According to the 71st round of the National Sample Survey Office data, 10% of the total out-of-pocket expenses (OOPE) on healthcare in India is for diagnostics. Specifically, in the outpatient department, 11% of the expenses are incurred on diagnostics and in the inpatient department, 9.6%. This indicates a high share of OOPE and is a reflection of the challenges the Indian healthcare system faces, where individuals, especially from the lower income group, have to bear a significant financial burden for diagnostic tests and related services.

The government has undertaken various initiatives, such as the National Diagnostics Service Initiative, under the National Health Mission, through which it aims to improve the accessibility and affordability of diagnostics in the country, especially in rural areas.

However, there is still a need for continued focus on reducing OOPE on diagnostics, especially for the population in rural India, where accessibility and affordability of diagnostic services remain a prominent challenge.

Pricing of diagnostic services in tier 2 and 3 cities

Owing to government initiatives as well as increasing awareness of diagnostic services, especially in the preventive healthcare segment, accessibility of diagnostic services has increased in tier 2 and 3 cities. According to a report by the Healthcare Federation of India, more than 50% of the districts identified by NITI Aayog as aspirational districts and lacking basic infrastructure the most, are being served by at least one national diagnostic player.

Additionally, cross subsidisation is a widely used business strategy in the diagnostics industry as the cost of providing discounted services to a particular group (for instance, government employees) is offset by charging higher prices to other groups (for instance, civilians). The prices of diagnostic services under the central government healthcare subsidisation scheme are heavily discounted compared with the average prices charged by national diagnostic players.

Additionally, pathology test prices in tier 2 and 3 cities are generally 20-30% lower than that in tier 1 cities, depending on the diagnostic services provider. In contrast, prices of radiology tests are typically 2-12% lower in tier 2 and 3 cities than in tier 1 cities.

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Pricing of diagnostic services in tier 2 and 3 cities

	Pathology	Radiology
Tier 1	100 (base)	713
Tier 2 and 3	78	693

Note: The above values are not actual prices, but a scaled version with base as tier 1 national players = 100
Source: Industry, CRISIL MI&A

Hospital-partnership model an emerging trend for the radiology business

From a radiology business perspective, the hub-and-spoke model works for players with multiple centres in a region. A satellite centre may offer basic radiology tests such as ECG, X-ray and sonography and refer patients to either regional centres or main/national centres for advanced radiology services. Patients have to visit the centres where the equipment is present in the case of radiology but test samples can be collected and sent to central testing labs in the case of pathology. Radiology involves physical examination of patients using latest medical technology.

However, a hospital-partnership model is emerging among radiology players. In this model, a hospital typically refers its patients to a radiology player based on their partnership. This model gives hospitals an opportunity to reduce their capital outlay towards in-house radiology equipment, ensures better managed services and helps avoid maintenance costs towards radiology equipment. It also provides hospitals quality output without having to employ dedicated professionals to run these services. Also, certain in-house radiology services have to be established by hospitals for examination of patients admitted to inpatient department (IPD).

Further, as diagnostic companies have a singular focus, they are able to provide better services, leading to better footfalls, which in turn also help generate more footfalls for hospitals. Diagnostic companies not only get an advantage of the hospital's captive footfalls but these footfalls also help them attain a brand image since they get an opportunity to cater to a large audience. This partnership model also enables a diagnostic centre to cut down/avoid real estate related expenses in cases where a diagnostic company establishes its service within the hospital premise itself. In such cases, the diagnostic company enters into a revenue sharing model with the hospital. The model bodes well for the diagnostic company as the hospital takes an equal responsibility for footfalls.

3.9 Revenue and profitability for select diagnostic chains

OPBDIT margins for organised diagnostic players expected to remain range bound in FY25

The profitability of diagnostic centres contracted in FY23 and remained range bound in FY24 owing to higher investment into digitization and direct acquisition of customers. Contraction of margins in FY23 can also be attributed to dip in Covid-19 revenues. Going forward, OPBDIT margins to remain range bound in FY25, on account of escalated reagent prices and focus of large diagnostic chains towards expanding geographic presence. Steep discounts offered by online players is also a risk which leads to contraction of margins.

To combat pricing pressures, companies are increasingly looking at higher share from walk-in customers, corporate clients, and preventive and wellness test packages. Because of this, large diagnostic chains are expected to have been favourably placed in terms of revenue growth as compared to their smaller counterparts. Many large diagnostic chains are still focusing on opening more collection centres in smaller tier-II and tier-III cities, which is expected to help boost revenues going forward as the capacity utilisation improves.

Major listed players have expanded vigorously through franchisees as part of their hub and spoke, as reflected in their revenue growth numbers and attractive OPBDIT margins.

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Operating Incomes of select diagnostic chains expected to have witnessed recovery in FY24, after normalisation in FY23
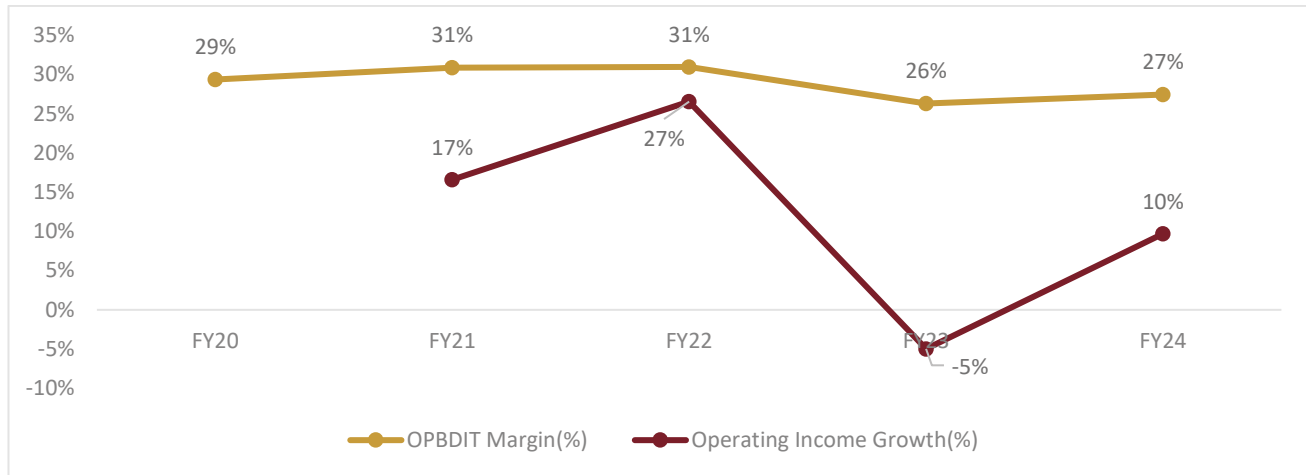
Note: Companies considered- Dr. Lal Pathlabs Limited, Vijaya Diagnostics, Metropolis Healthcare, Thyrocare Technologies
Source: CRISIL MI&A

In FY22, Diagnostic chains like Dr Lal, Metropolis, Thyrocare & Vijaya recorded aggregate top line growth of 27%. At an aggregate level, these diagnostic chains clocked an OPBDIT margin in the range of 25-45% during the period. In FY23, a dip of ~9% in the operating income and a decline of 450-500 bps in OPBDIT margin was witnessed, owing to fall in covid revenues and high base of previous fiscal. The operating income has recovered in FY24 growing ~10% over FY23, driven by a mix of growing number of patients and improving revenue per patient.

Going forward, CRISIL MI&A expects large chains to focus on containing costs, especially across their centres in large metro cities. About 55-60% of total costs (including lease rentals, employee, power, fuel and maintenance costs) are largely fixed and a marginal amount of cost savings is expected on this front too. Furthermore, many large diagnostic labs are expected to bring in more cost-control over their reagents/consumables through bulk supply deals.

However, diagnostic chains aiming for expanding their geographic presence, are opening reference labs at key locations to cater to collection centres in the region. This would lead to increasing overheads at these operational/soon to be operational reference labs.

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3.10 Overview of diagnostic market in East including Northeast India

(East including Northeast region includes states like Bihar, Jharkhand, Odisha, West Bengal, Chhattisgarh, Sikkim, Arunachal Pradesh, Assam, Tripura, Mizoram, Nagaland, Manipur, Meghalaya)

Diagnostic market in East including Northeast India to log 10.5-12.5% Compounded Annual Growth Rate (CAGR) between FY24 and FY28

The East including Northeast India diagnostic market grew at a CAGR of 9-10% between FY17 and FY24 to reach Rs 170-180 billion in FY24. The growth has been driven by a mix of growing number of patients and improving revenue per patient.

The diagnostic industry plays a crucial role in the healthcare ecosystem, facilitating the detection, diagnosis and monitoring of diseases. In East including Northeast India, the diagnostic sector holds immense potential amid evolving healthcare landscapes and increasing demand for quality healthcare services. The nature of the industry is fragmented, with presence of many unorganized players.

The diagnostics market in the region is expected to clock 10.5-12.5% CAGR between FY24 and FY28, and this growth is slightly more than India's diagnostic market growth of 10-12% projected during the same period. However, chained diagnostic players in the region are expected to grow faster than the industry, given that major chains have announced expansion plans in East including Northeast India. A robust diagnostic sector in East including Northeast India is an urgent need owing to several compelling factors. For one, the region has diverse landscapes, including remote and underserved areas, where access to quality healthcare services, particularly diagnostics, is limited. The region has limited presence of organised diagnostic chains. Establishing diagnostic facilities in these areas is imperative to ensure equitable access to healthcare and timely disease detection. Secondly, the region grapples with a considerable number of diseases, both communicable and non-communicable, which warrants advanced diagnostic capabilities for accurate diagnosis and effective management. Moreover, the region's dense population, in rural and urban areas, with matured population of ~30% individuals of more than 40 years of age underscores the need for a comprehensive diagnostic infrastructure capable of catering to diverse healthcare needs.

East including Northeast India diagnostic market overview and outlook (Rs billion)
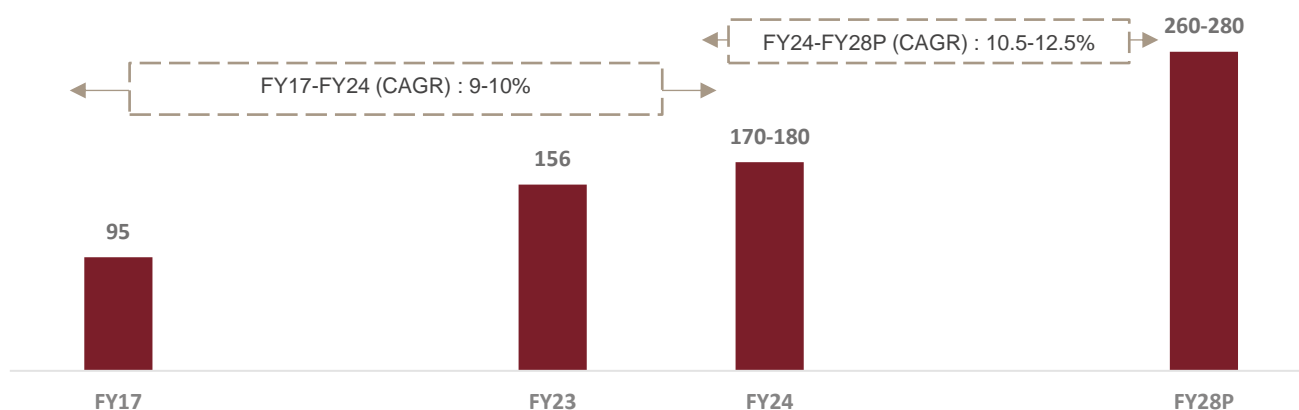
East including Northeast region for above market is defined as: Bihar, Jharkhand, Odisha, West Bengal, Chhattisgarh: Sikkim, Arunachal Pradesh, Assam, Tripura, Mizoram, Nagaland, Manipur, Meghalaya

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Source: Industry, CRISIL MI&A

The diagnostic market in India for FY24 displays a notable regional split, with the North leading at 28-30%, followed closely by the South at 25-27% and the West at 25-27%. The East including Northeast region lags behind with 20-21% share. Basis expansion activities planned by major players in the diagnostics segment, hospital segment and factoring in the disease burden in various states in India, it is estimated that North region is expected to gain an additional small share by FY28 compared to FY24. Meanwhile, the East including Northeast region is currently underserved given that it has some of the key cities like Bhubaneswar, Ranchi, Agartala, Patna, Shillong and Guwahati. The region is expected to grow at 10.5-12.5% CAGR, which is more than the overall industry growth rate of 10-12% between FY24-28. In FY28, the East including Northeast region is estimated to have an increased share in the diagnostic industry at 21-22% from the current 20-21%.

This regional split highlight the varying demand for diagnostic services across different regions. Understanding these regional dynamics is crucial for diagnostic companies to tailor their strategies and offerings to meet specific regional needs and capitalize on untapped market potential.

Region-wise split of Indian diagnostic market
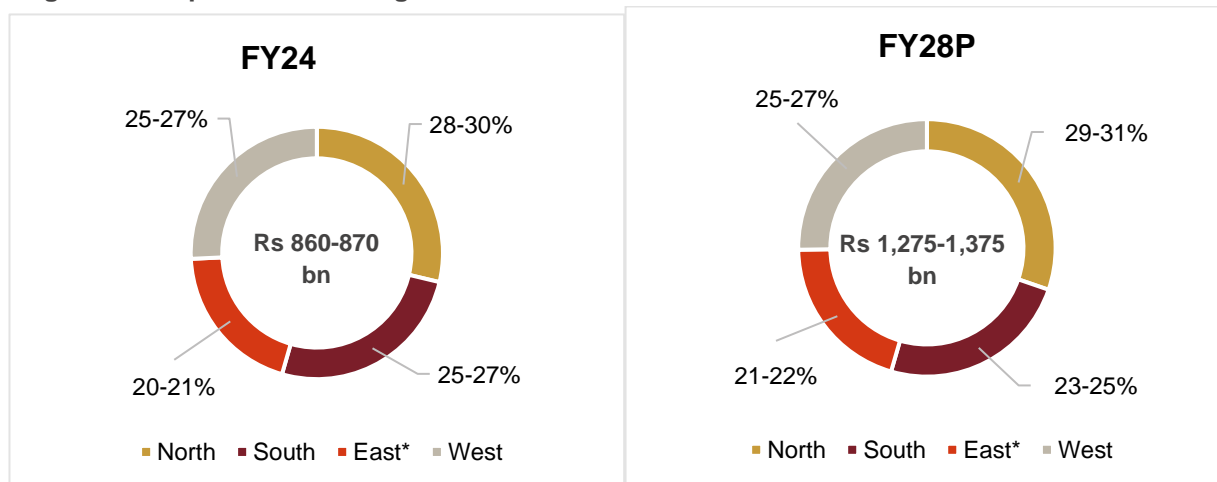
*East including Northeast
East including Northeast region is defined as: Bihar, Jharkhand, Odisha, West Bengal, Chhattisgarh: Sikkim, Arunachal Pradesh, Assam, Tripura, Mizoram, Nagaland, Manipur, Meghalaya
*North region is defined as: J&K, Himachal Pradesh, Punjab, Chandigarh, Uttarakhand, Haryana, Delhi and Uttar Pradesh*
West region is defined as: Rajasthan, Madhya Pradesh, Gujarat, Daman & Diu, Dadra & Nagar Haveli, Maharashtra and Goa
South region is defined as: Andhra Pradesh, Karnataka, Lakshadweep, Kerala, Tamil Nadu, Puducherry, Andaman & Nicobar
Source: Industry, CRISIL MI&A

Investing in the diagnostics sector not only addresses healthcare disparities but also stimulates economic growth by generating employment opportunities and fostering innovation. Furthermore, a robust diagnostics industry enables proactive preventive healthcare measures, facilitating early disease detection and intervention. Therefore, the development and expansion of the diagnostic sector in East India is crucial to enhancing healthcare accessibility, improving health outcomes and fostering socio-economic development in the region.

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East including Northeast region faces disparity in lab access

Region-wise split of NABL-accredited labs (February 2024)

| Region	NABL-accredited labs	NABL-accredited labs as a % of total	Population proportion (%)	NABL Labs/1 million Population
North	548	26%	25%	1.62
South	679	32%	20%	2.50
East including Northeast	365	17%	28%	0.96
West	555	26%	26%	1.60
Total	2,147	-	-	1.61

Note: Percentages may not add up to 100 due to rounding off decimals

East Including Northeast region is defined as: Bihar, Jharkhand, Odisha, West Bengal, Chhattisgarh, Sikkim, Arunachal Pradesh, Assam, Tripura, Mizoram, Nagaland, Manipur, Meghalaya

North region is defined as: J&K, Himachal Pradesh, Punjab, Chandigarh, Uttarakhand, Haryana, Delhi and Uttar Pradesh

West region is defined as: Rajasthan, Madhya Pradesh, Gujarat, Daman & Diu, Dadra & Nagar Haveli, Maharashtra and Goa

South region is defined as: Andhra Pradesh, Karnataka, Lakshadweep, Kerala, Tamil Nadu, Telangana, Puducherry, Andaman & Nicobar

*NABL Labs/10,000 population = (NABL accredited labs * 1000000)/ Population*

Source: NABL, CRISIL MI&A

As of February 2024, the eastern region, with the highest share of population at 28%, has the lowest number of NABL-accredited labs — both in absolute terms (365) and as a percent of total number of such labs in the country (17%). This suggests a disparity in access to accredited testing services in the region relative to population needs. While the south India boasts the highest share of NABL-accredited labs at 32%, the region is home to 20% of the country's population, indicating a potentially higher concentration of accredited testing facilities relative to its population size. Compared to other regions such as northern, southern, and western India, the diagnostics market in the eastern India is underserved, which is evidenced by the number of NABL-accredited laboratories. While the northern, southern and western India had 1.62, 2.50, and 1.60 NABL accredited labs per 1 million population, eastern India including Northeast had 0.96 NABL accredited laboratories per 1 million population. This highlights the importance of aligning the distribution of accredited laboratories with proportion of population to ensure equitable access to quality testing facilities across regions, which will ultimately enhance healthcare accessibility and quality nationwide.

As of March 31, 2024, Suraksha Diagnostics is the only company providing diagnostic services and having a reference laboratory in East and Northeast India to hold the College of American Pathologists accreditation.

Average diagnostic test expenditure region-wise

Average diagnostic test expenditure (Rs)

	Hospitalization	Non-hospitalization
North	2,600-2,700	70-80
South	2,000-2,100	55-65
East Including Northeast	1,400-1,500	80-90
West	2,100-2,200	80-90

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India	2,000-2,100	73-83

As per data from 75th round of National Sample Survey (NSS) on Health, in the East including Northeast region, the average expenditure on diagnostic tests varies significantly across different healthcare settings. Patients undergoing hospitalisation in this region tend to incur lower costs for diagnostic tests compared with the regional average, indicating potentially more affordable healthcare services in hospital settings. Similarly, diagnostic tests conducted in government healthcare facilities exhibit a lower average expenditure in the East including Northeast region, suggesting that these facilities may offer subsidised or lower-cost diagnostic services to patients. Charitable institutions in the East including northeast region also show a trend of lower diagnostic test expenditure, indicating accessibility to affordable healthcare services for underserved populations. However, the average expenditure on diagnostic tests in private healthcare facilities is relatively higher in the region, highlighting the potential financial burden on patients. The higher realisation in private diagnostic facilities is due to the demand-supply gap, reflecting the limited availability of high-quality infrastructure compared to other states, resulting in a demand-supply imbalance. Despite slightly higher costs for non-hospitalisation diagnostic tests, the overall trend suggests that diagnostic services in the eastern region are relatively more affordable and accessible in government and charitable healthcare settings, while in the private setting it is the most affordable among all the regions..

3.11 Overview of diagnostic market in West Bengal

West Bengal diagnostic market is expected to clock 10.5-12.5% Compounded Annual Growth Rate (CAGR) thereby reaching a market size of Rs. 95-100 billion in FY28

The Diagnostic market in West Bengal grew at a CAGR of 9-10% from FY17 to FY24 to reach a market of Rs. 61-63 billion in FY24. From FY24 to FY28, West Bengal diagnostic market is expected to clock 10.5-12.5% CAGR thereby reaching a market size of Rs. 95-100 billion in FY28.

The growth has been mainly driven by growing middle class population with higher disposable income who are willing to spend on quality healthcare, regular health checkups and preventive care, rising incidence of chronic non-communicable diseases (NCDs) such as diabetes, hypertension and cardiovascular diseases, and medical tourism wherein West Bengal particularly Kolkata has become a healthcare hub with patients from neighbouring states and even countries such as Bangladesh visiting the state for treatment, thereby driving up demand for diagnostic services. The state had second highest incidence of NCDs in CY21 as per data report in the National Health Profile 2022. . In terms of medical tourism, Bangladesh accounted for 69% of all medical tourists visiting India in CY22. The West Bengal diagnostics market is fragmented in nature, with low penetration of chained diagnostic centres and high concentration of standalone centres. The fragmented nature of the market highlights an opportunity for chained players to increase their market share in the region.

West Bengal diagnostic market overview and outlook (Rs billion)
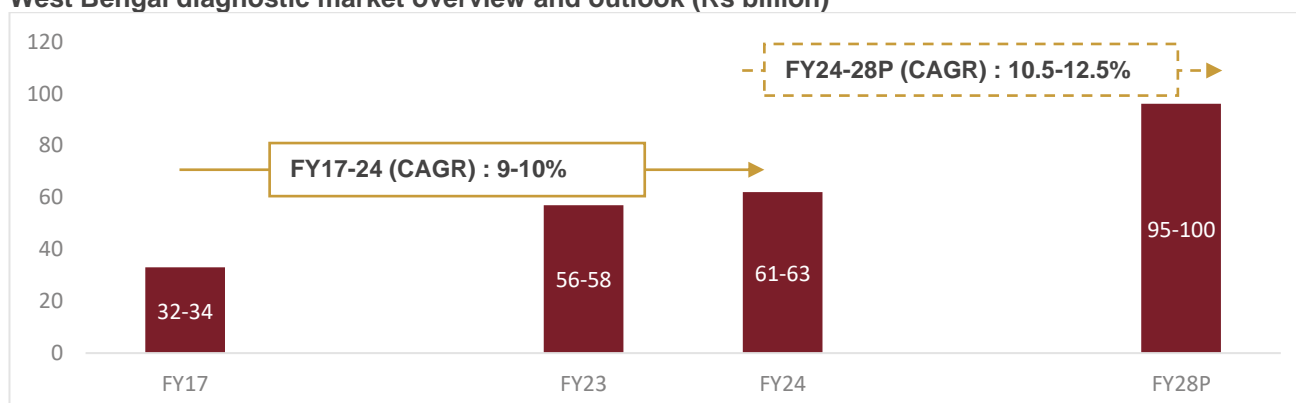
Source: CRISIL MI&A

Breakup of West Bengal diagnostic market in terms of hospital-based diagnostic centres and standalone and chained diagnostic centres for FY24 (by value)

- Hospital-Based diagnostic Centres
- Standalone and Chained diagnostic centres
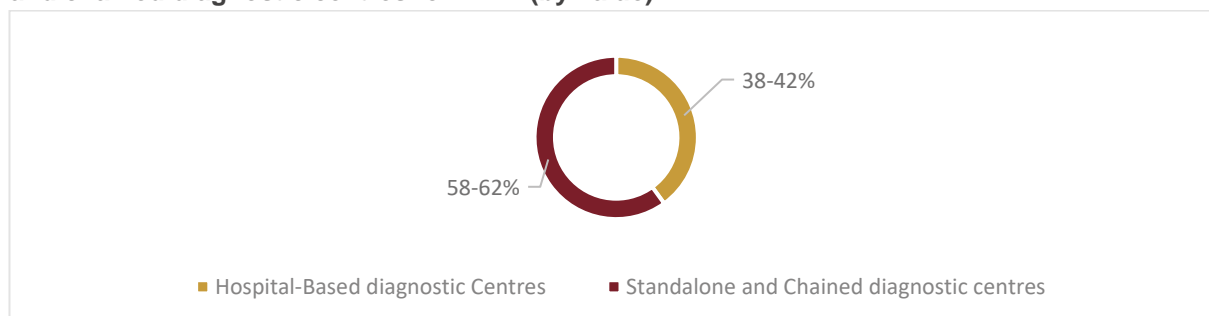
Source: CRISIL MI&A

The hospital-based diagnostic market is characterized by integrated services that provide immediate and comprehensive testing capabilities for inpatients, outpatients, and emergency care. Hospitals offer a broad spectrum of diagnostic services, ranging from routine blood tests to advanced imaging. Standalone and chained diagnostic centres on the other hand comprises of standalone radiology/pathology centres, and chained diagnostic centres that operate independently from the hospitals. These centres are often more accessible with locations spread across urban, semi-urban and rural areas.

For FY24, hospital-based diagnostic centres made up 38-42% of the West Bengal diagnostic market by value, while stand-alone and chained diagnostic centres together made up 58-62% of the West Bengal diagnostic market by value.

West Bengal district-wise population

West Bengal is the fourth most populous state in India with an estimated population of ~99-100 million as of 2023. The state has a total of 23 districts which include Alipurduar, Bankura, Birbhum, Cooch Behar, Dakshin Dinajpur, Darjeeling, Hooghly, Howrah, Jalpaiguri, Jhargram, Kalimpong, Kolkata, Malda, Murshidabad, Nadia, North 24 Parganas, Paschim Bardhaman, Paschim Medinipur, Purba Bardhaman, Purba Medinipur, Purulia, South 24 Parganas and Uttar Dinajpur with Kolkata being the capital of the state. Estimated population of each district is given below.

West Bengal district wise estimated population (2023)

District	Estimated Population 2023 (million)
Alipurduar	NA
Bankura	~3.90
Birbhum	~3.80
Cooch Behar	~3.06
Dakshin Dinajpur	~1.82
Darjeeling	~2.00
Hooghly	~5.99
Howrah	~5.26
Jalpaiguri	~4.20
Jhargram	NA
Kalimpong	NA

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Kolkata	~4.88
Malda	~4.33
Murshidabad	~7.71
Nadia	~5.61
North 24 Parganas	~10.87
Bardhaman*	~8.38
Paschim Medinipur	~6.42
Purba Medinipur	~5.53
Purulia	~3.07
South 24 Parganas	~8.86
Uttar Dinajpur	~3.26

Note:

District wise population has been estimated using census 2011 data and UIDAI 2023 data for West Bengal.

As the population is estimated based on the 2011 census data, the data for Alipurduar, Jhargram, Kalimpong is not available as these districts were not formed then.

* Bardhaman district population comprises of Paschim Bardhaman and Purba Bardhaman

Source: Census 2011, UIDAI, CRISIL MI&A

Consulting

4 Competitive landscape

The diagnostics industry in India can be categorised as standalone centres, hospital labs and diagnostics chains. CRISIL MI&A has considered the following diagnostics chains as competitors of Suraksha Diagnostics Pvt Ltd. These chains either operate in the same line of business or have the same product portfolio as that of Suraksha Diagnostics.

A note: The peer set considered is indicative and not exhaustive. Also, the data has been obtained from publicly available sources, including annual reports of players, regulatory filings and/or company websites. Financials in the competitive landscape analysis section have been reclassified by CRISIL unless otherwise stated.

The following nomenclature has been used in further section of report as legal entity name: representative company name

- Agilus Diagnostics Limited: Agilus Diagnostics

- Dr. Lal Pathlabs Limited: Dr Lal Pathlabs

- Metropolis Healthcare Limited: Metropolis Healthcare

- Thyrocare Technologies Limited: Thyrocare

- Vijaya Diagnostic Centre Limited: Vijaya Diagnostic

- Suraksha Diagnostic Private Limited: Suraksha Diagnostics

Overview of players considered

Parameters (FY24)	Year of incorporation	Geographic presence**	Major Regional Presence in terms of revenue*	Market share in Major market***	Tie-ups
Agilus Diagnostics (erstwhile SRL Ltd.)	1995	Pan-India, international	North – 33%	North: 1.70-1.90%	Three collaborative tie-ups with start-up/NGO (Haystack Analytics, Department of Bioscience and Bioengineering IIT Mumbai and One Health Trust) to conduct collaborative/population research studies.
Dr Lal PathLabs	1995	Pan-India, international	North – 62%	North: 5.30-5.70%	Tie-up with IIM Ahmedabad for healthcare research
Metropolis Healthcare	2000	Pan-India, international	West – 51%	West: 2.50-2.80%	NA
Thyrocare	2001	Pan-India	NA	NA	NA
Vijaya Diagnostic	2002	South India-focused	South - 95%	South: 2.20-2.50%	NA
Suraksha Diagnostic	2005	Eastern India	East – 100%	East: 1.15-1.30%	Tie up with State Govt of Meghalaya to setup a Diagnostic Centre, Arrangement of PPP model with NRS Hospital.

The companies derive the maximum revenues from the mentioned regions as reported by them and it denotes the percentage of total revenues these companies earn from the mentioned regions

**Geographic presence is given basis presence of labs & centres*

*** Market share is calculated using revenue reported by the company for the respective region and the overall diagnostic market in that region*

Consulting

East region is defined as: Bihar, Jharkhand, Odisha, West Bengal, Chhattisgarh: Sikkim, Arunachal Pradesh, Assam, Tripura, Mizoram, Nagaland, Manipur, Meghalaya
North region is defined as: J&K, Himachal Pradesh, Punjab, Chandigarh, Uttarakhand, Haryana, Delhi and Uttar Pradesh
West region is defined as: Rajasthan, Madhya Pradesh, Gujarat, Daman & Diu, Dadra & Nagar Haveli, Maharashtra and Goa
South region is defined as: Andhra Pradesh, Karnataka, Lakshadweep, Kerala, Tamil Nadu, Puducherry, Andaman & Nicobar
Source: Ministry of Corporate Affairs, Company documents, Company website, CRISIL MI&A

- As of FY24, the market share of Suraksha Diagnostics in its major market which is East India is 1.15-1.30%. This is less than peers like Dr.Lal Pathlabs which has a market share of 5.30-5.70% in its major market i.e North India and Vijaya diagnostics which has a market share of 2.20-2.50% in its major market, i.e. South India.

Regional revenue mix
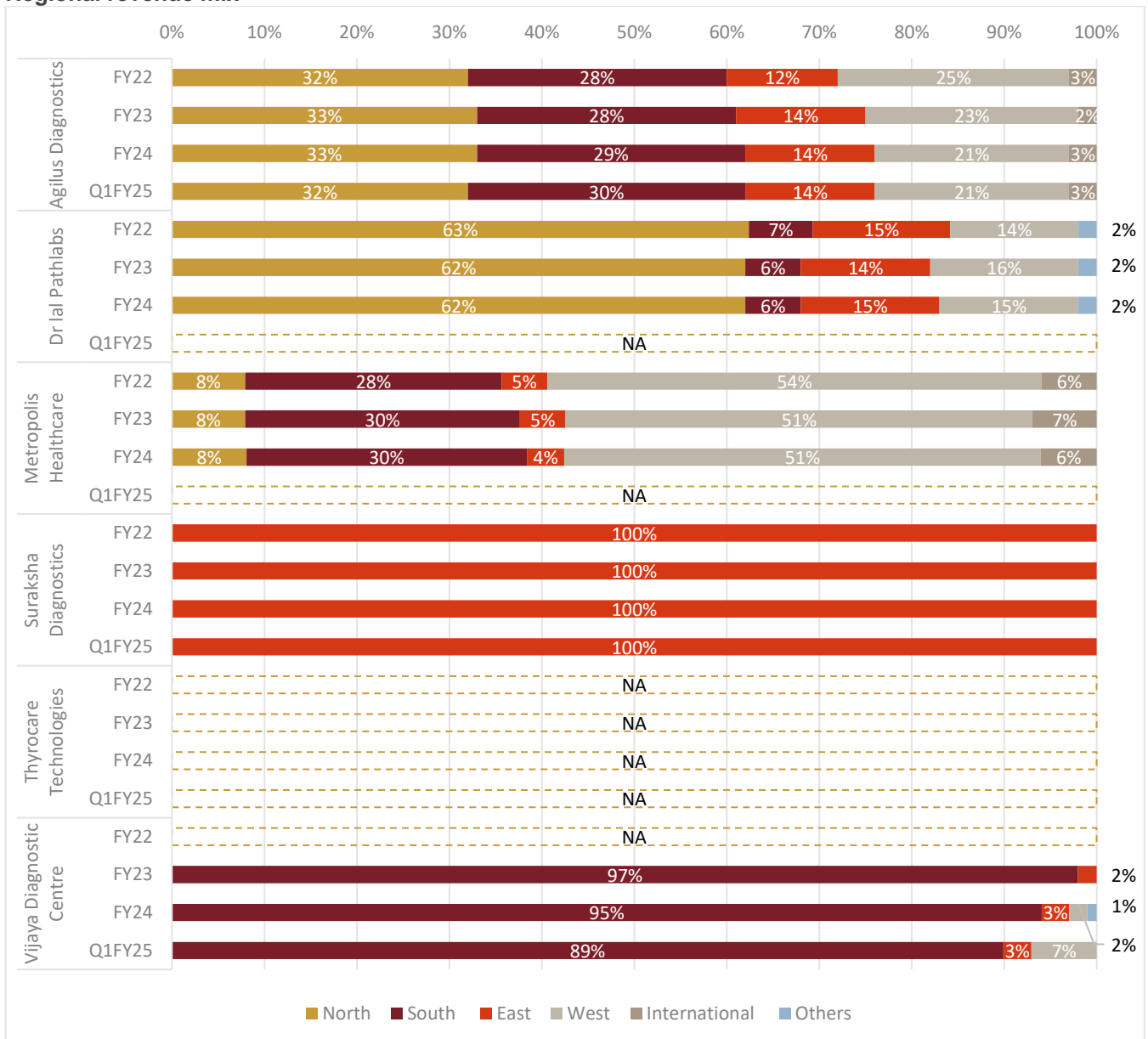
Notes: NA: Not Available

Consulting

Values in the table are rounded off to the nearest zero decimal for consistency, as not all companies report the values in single or double decimal, hence they may not add upto 100%.

CRISIL has used numbers reported by the respective companies

For Metropolis Healthcare, FY23 and FY24 share is based on core business reported in quarterly filings by the company, FY22 share is based on total business as reported by the company

Source: Company documents, Company website, concall transcripts, CRISIL MI&A

Key Observations

- While Dr. Lal Pathlabs and Metropolis have pan India presence, they have more than 50% of revenue coming from one single geography - 62% from North for Dr. Lal Pathlabs and 51% from West for Metropolis in FY24.

- Suraksha Diagnostic and Vijaya Diagnostic are regional players with 100% of Suraksha Diagnostics' revenues coming from East region, while Vijaya Diagnostic has 95% of its revenues coming from East region in FY24.

Micro-market Analysis of select Key Players (FY24)

Comparison with Dr. Lal Pathlabs (FY24)

Parameters (FY24)	Key market	Key market estimated Population	Key Market Revenue* (Rs Million)	Key Region/state Revenue* (Rs Million)	Key Region/state population (Million)
Dr Lal PathLabs	Delhi-NCR	~70-75 million	6902.46	North Region: 13,804.92	North region: 351.92
Suraksha Diagnostics	Kolkata & adjacent districts^	~24.61 million**	1,680.55	East and Northeast Region: 2,187.09	East and Northeast Region: 393.92

Note: Agilus Diagnostics, Metropolis Healthcare and Thyrocare Technologies do not report numbers at a micro-market level and hence they have been excluded from the above table

^ Adjacent districts of Kolkata consists of North 24 Parganas and South 24 Parganas district

*** 2023 estimated population*

East and Northeast region is defined as: Bihar, Jharkhand, Odisha, West Bengal, Chhattisgarh, Sikkim, Arunachal Pradesh, Assam, Tripura, Mizoram, Nagaland, Manipur, Meghalaya

North region is defined as: J&K, Himachal Pradesh, Punjab, Chandigarh, Uttarakhand, Haryana, Delhi and Uttar Pradesh

*Key Market revenue and key region/state revenue is calculated using revenue reported by the company for the respective region and the Overall revenue.

Source: Company and Company documents, UIDAI, CRISIL MI&A

Comparison with Vijaya Diagnostics (FY24)

Parameters (FY24)	Key market	Key market estimated Population	Key Market Revenue* (Rs Million)	Key Region/state Revenue* (Rs Million)	Key Region/state population (Million)
Vijaya Diagnostic	Hyderabad	~11.07 million	4,272.92	Andhra Pradesh (AP)-Telangana: 5,204.20	AP-Telangana: 91.25
Suraksha Diagnostics	Kolkata & adjacent districts^	~24.61 million**	1,680.55	West Bengal: 2,088.19	West Bengal: 99.08

Note: Agilus Diagnostics, Metropolis Healthcare and Thyrocare Technologies do not report numbers at a micro-market level and hence they have been excluded from the above table

Consulting

^Adjacent districts of Kolkata consists of North 24 Parganas and South 24 Parganas district

**2023 estimated population

*Key Market revenue and key region/state revenue is calculated using revenue reported by the company for the respective region and the Overall revenue.

Source: Company and Company documents, UIDAI, CRISIL MI&A

- Diagnostic markets in Delhi-NCR and Hyderabad are more competitive markets than in Kolkata, on account of number of chained players operating in those markets.

4.1 Operational overview

Scale of operations of players considered (As of March 31, 2022)

Parameters (As of March 31, 2022)	Agilus Diagnostics	Dr Lal PathLabs	Metropolis Healthcare	Suraksha Diagnostics	Thyrocare	Vijaya Diagnostic
Total number of labs[1]	423	277[2]	171[3]	7	26[4]	12[5]
NABL-accredited labs	NA	31	25	3	NA	11
Collection centres / customer touch points[1]	3,050	4,731[6]	3,134[7]	154	9,000+[8]	95[9]
Collection centres/Customer touch points per lab[9]*	7	17	18	22	346	8
Total Number of tests offered	NA	5,113	4,000+	1,924	700+	2,550+

Note: NA: not available

*Values are rounded off to nearest zero decimal value for consistency

[1] No. of labs is not strictly comparable across players as definition for the same is not provided across players. Similarly, collection centres / customer touch points are not comparable, as each player has a different definition of what constitutes these

[2] Dr Lal PathLabs includes 38 labs of Suburban Diagnostics (India) Pvt Ltd

[3] Labs for Metropolis Healthcare include 30 labs of Hitech Diagnostics Centre Pvt Ltd

[4] For Thyrocare, 1 central processing lab, 22 regional processing labs including 1 Covid RTPCR Testing van, 3 zonal processing labs are added to arrive at total labs

[5] For Vijaya Diagnostic, 1 national reference lab and 11 reference labs are added to arrive at total labs

191 patient service centres, which are centres operated by the company, and 318 labs with walk-in facility

[6] Patient service centres inclusive of 177 PSCs of Suburban Diagnostics (India) Pvt. Ltd

[7] Patient service centres inclusive 70 centres of Hitech

[8] Collection centres

[8] Diagnostic centres

[9] Number of customer touch points / collection centres serving one lab, which is calculated as collection centres / total number of labs

Source: Company documents, Company website, CRISIL MI&A

Scale of operations of players considered (As of March 31, 2023)

Parameters (As of March 31, 2023)	Agilus Diagnostics	Dr Lal PathLabs	Metropolis Healthcare	Suraksha Diagnostics	Thyrocare	Vijaya Diagnostic
Total number of labs[1]	413	277[2]	175[3]	8	31[4]	17[5]
NABL-accredited labs	43	36	27	3	20	12

Consulting

Parameters (As of March 31, 2023)	Agilus Diagnostics	Dr Lal PathLabs	Metropolis Healthcare	Suraksha Diagnostics	Thyrocare	Vijaya Diagnostic
Collection centres / customer touch points[1]	3,757[6]	5,102[7]	3,675[7]	174	NA	121[8]
Collection centres/Customer touch points per lab[9]*	9	18	21	22	NA	7
Total Number of tests offered	3,600+	5,191	4,000+	2,037	720	2,550+

Note: NA: not available

*Values are rounded off to nearest zero decimal value for consistency

[1] No. of labs is not strictly comparable across players as definition for the same is not provided across players. Similarly, collection centres / customer touch points are not comparable, as each player has a different definition of what constitutes these

[2] Dr Lal PathLabs includes labs of Suburban Diagnostics (India) Pvt Ltd

[3] Labs for Metropolis Healthcare include 20 labs of Hitech Diagnostics Centre Pvt Ltd

[4] For Thyrocare, 1 central processing lab, 20 regional processing labs, 3 zonal processing labs, 4 satellite processing labs, and 3 Covid-19 labs are added to arrive at total labs

[5] For Vijaya Diagnostic, 1 national reference lab and 16 reference labs are added to arrive at total labs

[6] For Agilus Diagnostics, customer touch points include 3,248 collection centres, which are centres operated by franchisees, 191 patient service centres, which are centres operated by the company, and 318 labs with walk-in facility

[7] Patient service centres inclusive of Hitech network

[8] Diagnostic centres

[9] Number of customer touch points / collection centres serving one lab, which is calculated as collection centres / total number of labs

Source: Company documents, Company website, CRISIL MI&A

Scale of operations of players considered (As of March 31, 2024)

Parameters (As of March 31, 2024)	Agilus Diagnostics	Dr Lal PathLabs	Metropolis Healthcare	Suraksha Diagnostics	Thyrocare	Vijaya Diagnostic
Total number of labs[1]	420	280[2]	199[3]	9	30	22[9]
NABL-accredited labs	42	36	28	3	25	17
Collection centres / customer touch points[1]	3,976	5,762[4]	4,150[5]	194	NA	145[6]
Collection centres/Customer touch points per lab[7]*	9	21	21	22	NA	7
Total Number of tests offered	3600+	4,857[8]	4000+	2,302	929	2700+[10]

Note: NA: not available

*Values are rounded off to nearest zero decimal value for consistency

[1] No. of labs is not strictly comparable across players as definition for the same is not provided across players. Similarly, collection centres / customer touch points are not comparable, as each player has a different definition of what constitutes these

[2] Dr Lal PathLabs includes labs of Suburban Diagnostics (India) Pvt Ltd

[3] Labs for Metropolis Healthcare include 20 labs of Hitech Diagnostics Centre Pvt Ltd

[4] Patient Service Centres

[5] Customer touch points for Metropolis Healthcare includes 775-ARC, 2,944-Third Party PSCs, 316-Owned PSCs and 115 – service network of Hitech

[6] Centres

[7] Number of customer touch points / collection centres serving one lab, which is calculated as collection centres / total number of labs

Consulting

[8] Test count has been rationalized basis current practice

[9] For Vijaya Diagnostic, 1 national reference lab and 21 reference labs are added to arrive at total labs

[10] For Vijaya Diagnostic, total number of tests offered consists of 2,000 pathology tests and 700+ radiology tests

Source: Company documents, Investor Presentation, CRISIL MI&A

Scale of operations of players considered (As of June 30, 2024) (Q1FY25)

Parameters (As of June 30, 2024)	Agilus Diagnostics	Dr Lal PathLabs	Metropolis Healthcare	Suraksha Diagnostics	Thyrocare	Vijaya Diagnostic
Total number of labs[1]	NA	NA	204	9	30[2]	NA
NABL-accredited labs	NA	37	28	3	25	17
Collection centres / customer touch points[1]	4,055	NA	4,216[3]	215	NA	146[4]
Collection centres/Customer touch points per lab[7]*	NA	NA	21	24	NA	NA
Total Number of tests offered	NA	NA	4,000+	2,337	NA	NA

Note: NA: not available

*Values are rounded off to nearest zero decimal value for consistency

[1] *No. of labs is not strictly comparable across players as definition for the same is not provided across players. Similarly, collection centres / customer touch points are not comparable, as each player has a different definition of what constitutes these*

[2] *Includes 29 labs across pan India and 1 lab in Tanzania*

[3] *Service Network includes 816-Rural, 2,929-Franchisee and 471-Owned centres*

[4] *Centres includes 18 centres of PH*

[7] *Number of customer touch points / collection centres serving one lab, which is calculated as collection centres / total number of labs*

Source: Company documents, Investor Presentation, CRISIL MI&A

Realisations of players considered (As of March 31, 2022)

Parameters (As of March 31, 2022)	Agilus Diagnostics	Dr Lal PathLabs	Metropolis Healthcare	Suraksha Diagnostics	Thyrocare	Vijaya Diagnostic
Operating Income (mn)[#]	16,051.86	20,879.03	12,283.21	2,231.93	5,906.60	4,623.70
No. of tests conducted in a year (mn)	44.18*	66.00***	26.00*	4.99*	110.30**	9.32*
No, of patients served (mn)	21.40	27.30	13.40	1.69	16.32	3.62
Tests per patient[1]	2.06	2.42	1.94	2.95	6.76	2.57
Revenue per test (Rs)[2]	363.33	316.35	472.43	447.00	53.55	496.11
Revenue per patient (Rs)[3]	750.09	764.80	916.66	1,317.81	361.92	1,277.27
Revenue per lab (mn)[4]	37.95	75.38	71.83	318.85	227.18	385.31
Patients per centre[5]	7,016.39	5,770.45	4,275.69	10,997.87	1,813.33	38,105.26

Note:

[#] *Restated values as per CRISIL standards*

* tests perfomed

** investigations performed

Consulting

*** Samples collected

Number is derived / calculated by CRISIL MI&A as mentioned below:

[1] Test per patient = no. of tests conducted in a year / no. of patients served

[2] Revenue per test = operating income / no. of tests conducted in a year

[3] Revenue per patient = operating income / no. of patients served

[4] Revenue per lab = operating income / total no. of labs

[5] Patients per centre = no. of patients served / collection centres (customer touch points)

Source: Company documents, Company website, concall transcripts, CRISIL MI&A

Realisations of players considered (As of March 31, 2023)

Parameters (As of March 31, 2023)	Agilus Diagnostics	Dr Lal PathLabs	Metropolis Healthcare	Suraksha Diagnostics	Thyrocare	Vijaya Diagnostic
Operating Income (mn)#	13,480.66	20,175.78	11,482.10	1,901.34	5,270.60	4,592.23
No. of tests conducted in a year (mn)	39.07*	72.3***	25.3*	5.17*	141.42**	10.05*
No, of patients served (mn)	16.62	26.9	12.20	1.11	15.40	3.18
Tests per patient[1]	2.35	2.69	2.07	4.65	9.18	3.16
Revenue per test (Rs)[2]	345.04	279.06	453.84	367.92	37.27	456.94
Revenue per patient (Rs)[3]	811.11	750.03	941.16	1,711.58	342.25	1,444.10
Revenue per lab (mn)[4]	32.64	72.84	65.61	237.67	170.02	270.13
Patients per centre[5]	4,423.74	5,272.44	3,319.73	6,384.32	NA	26,280.99

NA: Not available

Restated values as per CRISIL standards

* tests perfomed

** investigations performed

*** Samples collected

Number is derived / calculated by CRISIL MI&A as mentioned below:

[1] Test per patient = no. of tests conducted in a year / no. of patients served

[2] Revenue per test = operating income / no. of tests conducted in a year

[3] Revenue per patient = operating income / no. of patients served

[4] Revenue per lab = operating income / total no. of labs

[5] Patients per centre = no. of patients served / collection centres (customer touch points)

Source: Company documents, Company website, concall transcripts, CRISIL MI&A

Realisations of players considered (As of March 31, 2024)

Parameters (As of March 31, 2024)	Agilus Diagnostics	Dr Lal PathLabs	Metropolis Healthcare	Suraksha Diagnostics	Thyrocare	Vijaya Diagnostic
Operating Income (mn)#	13,720.00^	22,266.41	12,077.09	2,187.09	5,723.90	5,478.05
No. of tests conducted in a year (mn)	40.00*	78.20***	24.00*	5.98*	147.04**	11.89*
No, of patients served (mn)	16.40	27.60	12.00	1.14	15.00	3.55
Tests per patient[1]*	2.44	2.83	2.00	5.26	9.80	3.35

Consulting

Revenue per test (Rs)[2]	343.00	284.74	503.21	365.64	38.93	460.73
Revenue per patient (Rs)[3]	836.59	806.75	1,006.42	1,922.44	381.59	1,543.11
Revenue per lab (mn)[4]	32.67	79.52	60.69	243.01	190.80	249.00
Patients per centre[5]*	4,124.75	4,790.00	2,973.98	5,864.23	NA	24,482.76

NA: Not available

Restated values as per CRISIL standards except for Agilus diagnostics

^ For Agilus Diagnostics, Operating income, No. of tests conducted in a year and No. of patients served is as reported by Fortis Healthcare Ltd. in its Q4FY24 investor presentation and annual report. Rest of the numbers are calculated based on the data.

* tests perfomed

** investigations performed

*** Samples collected

Notes:

Number is derived / calculated by CRISIL MI&A as mentioned below:

[1] Test per patient = no. of tests conducted in a year / no. of patients served

[2] Revenue per test = operating income / no. of tests conducted in a year

[3] Revenue per patient = operating income / no. of patients served

[4] Revenue per lab = operating income / total no. of labs

[5] Patients per centre = no. of patients served / collection centres (customer touch points)

Source: Company documents, Company website, concall transcripts, CRISIL MI&A

Realisations of players considered (As of June 30, 2024) (Q1FY25)

Parameters (As of June 30, 2024)	Agilus Diagnostics	Dr Lal PathLabs	Metropolis Healthcare	Suraksha Diagnostics	Thyrocare	Vijaya Diagnostic
Operating Income (mn)[#]	3,430.00^	6,019.00	3,133.55	607.32	1,569.10	1,562.17
No. of tests conducted in a year (mn)	9.92*	21.10***	6.30*	1.58*	40.70**	3.38*
No, of patients served (mn)	4.00	7.20	3.04	0.28	4.10	0.96
Tests per patient[1]*	2.48	2.93	2.07	5.58	9.93	3.52
Revenue per test (Rs)[2]	345.77	285.26	497.39	393.52	38.55	462.18
Revenue per patient (Rs)[3]	857.50	835.97	1,030.77	2,146.01	382.71	1627.26
Revenue per lab (mn)[4]	NA	NA	15.36	67.48	52.30	NA
Patients per centre[5]*	NA	NA	721.06	1,316.28	NA	6,575.34

NA: Not available

Operating Income for all the companies is as reported by the companies in its Q1FY25 quarterly reports and has not been reclassified by CRISIL

^ For Agilus Diagnostics, Operating income, No. of tests conducted in a year and No. of patients served is as reported by Fortis Healthcare Ltd. in its Q1FY25 investor presentation. Rest of the numbers are calculated based on the data.

* tests perfomed

** investigations performed

*** Samples collected

Notes:

Number is derived / calculated by CRISIL MI&A as mentioned below:

[1] Test per patient = no. of tests conducted in a year / no. of patients served

Consulting

[2] *Revenue per test = operating income / no. of tests conducted in a year*

[3] *Revenue per patient = operating income / no. of patients served*

[4] *Revenue per lab = operating income / total no. of labs*

[5] *Patients per centre = no. of patients served / collection centres (customer touch points)*

Source: Company documents, Company website, concall transcripts, CRISIL MI&A

- Among the players considered, Suraksha Diagnostics had the highest revenue generated per patient of Rs.1,922.44 and the second highest revenue per lab of Rs. 243.01 million in FY24.

- For FY24, Among the considered peers, Suraksha Diagnostics reported the second highest Tests/patients of 5.26.

Segmental revenue contribution of players considered

Pathology and radiology

FY24	Radiology	Pathology
Agilus Diagnostics	✔	✔
Dr Lal PathLabs	✔	✔
Metropolis Healthcare	✘	✔
Suraksha Diagnostics	✔	✔
Thyrocare	✔	✔
Vijaya Diagnostic	✔	✔

Notes:

Source: Company Website, Company Documents, CRISIL MI&A

The model of integrated pathology and radiology services offers significant barriers to entry including against new age technology-led diagnostic chains on account of capital expenditure required, brand equity of existing companies amongst the network of doctors, and stringent regulation in terms of authorizations required for business operations.

Revenue contribution from pathology and radiology

	FY22		FY23		FY24		Q1FY25	
	Radiology	Pathology	Radiology	Pathology	Radiology	Pathology	Radiology	Pathology
Agilus Diagnostics	NA	NA	4%	96%	NA	NA	NA	NA
Dr Lal PathLabs	NA	NA	NA	NA	NA	NA	NA	NA
Metropolis Healthcare	NA	NA	NA	98%	NA	99%	NA	NA
Suraksha Diagnostics^	31%	36%	44%	54%	46%	53%	47%	50%
Thyrocare%	5%	95%	8%	92%	8%	89%	8%	88%
Vijaya Diagnostic	33%	67%	35%	65%	36%	64%	38%	62%

Notes: NA: Not Available

1 Values in the table are rounded off to the nearest zero decimal for consistency, as not all companies report values in single or double decimal. CRISIL has used numbers reported by the respective companies

2 Radiology includes high-end tests such as CT scan and MRI

% For Thyrocare,

Consulting

For Q1FY25, Materials & Others which comprises of about 3% of the consolidated revenue has not been represented in the above table for consistency

For FY24, Materials & Others which comprises of about 3% of the consolidated revenue has not been represented in the above table for consistency

For FY23 and FY22, annual revenue for pathology and radiology has been collated to arrive at the share

^ For Suraksha Diagnostics,

1 For FY24, Doctor Consultation revenue and Covid Revenue of ~0.67% has not been included in the above table for consistency

2 For FY23, Covid Revenue of 1.87% has not been included in the above table for consistency

3 For FY22, Covid Revenue of 33.05% has not been included in the above table for consistency

Source: Company documents, Company Website, CRISIL MI&A

- Suraksha Diagnostics is the largest full-service and integrated diagnostic chain headquartered in East India, by operating income, with an operating income of Rs. 1,901.34 million as of FY23.

- Suraksha Diagnostics is the most diversified in terms of pathology and radiology among the players considered as it derived 53.30% of its revenue from pathology and 46.03% from radiology for FY24. Remaining 0.67% of their revenue comes from Covid-19 tests and doctor consultations.

Services offered by the players considered

Company	Services
Agilus Diagnostics	• **Packages offered:** Complete care diabetes, Complete care immunity, Immune check with spike antibody test,Complete care geno-wellness etc. • **Major tests offered:** Hemogram, Lipid Profile, Glycosylated Hemoglobin, Liver & Kidney Profile, Sugar PP, Anti Islet Cell Antibody, Thyroid Profile: Serum, Prothrombin Time: Plasma, Hepatitis C Antibodies etc.
Dr Lal PathLabs	• **Packages Offered:** Diabetic Care program, Pregnancy Packages, SwasthFit, Allergy, Oncopro, etc. • **Major Tests Offered:** Allergy Screen, Glucose:Fasting, HbA1c:Glucosylated Hemoglobin, Thyroid Profile, Kidney Panel, Lipid Screen, Platelet Count, Cholesterol:Total, Liver Panel etc.
Metropolis Healthcare	• **Packages offered:** Health Checkup-Truhealth Vital Plus, Whole body checkup-Truhealth Vital, Senior Citizen Health Checkup Package-Truhealth Expert Male, Full body Checkup for Women-Truhealth Proactive Female etc. • **Major Tests Offered:** CBC Test, Thyroid, Allergy Panel, Lipid Profile, HbA1C Test, Renal Function, Testosterone Profile, Vitamin Profile Test, HBV Profile, Liver Onco Marker Profile, Prostate Profile, Stomach Marker Profile, Athritis Profile
Suraksha Diagnostics	• **Packages offered:** Bone & Joint, Men's Health, Women's Health, Diabetes Care, Fever, At home Packages, Full-body Checkups, Heart & Hypertension, etc • **Major Tests Offered:** Thyroid Profile, Lipid Profile, Allergy Screening, Platelet Count, Ultrasound Liver, Liver Function Test, Cancer Hotspot Panel, Lung Cancer Panel, Ultrasound pregnancy, Ultrasound Doppler Heart etc. • Suraksha Diagnostics also provides services in the form of **polyclinic chambers** housed in diagnostic centers which provide medical consultation services, enabling patient convenience through holistic integration of services.
Thyrocare	• **Packages Offered:** Aarogyam 1.1 With Utsh-Lipid, Liver, Thyroid, Renal etc, Aarogyam 1.5 With Utsh- Lipid, Liver, Hormone, Elements, Vitamins etc, Aarogyam X With Utsh- Arthritis, Cardiac Risk Markers, Pancreatic, Renal, Urinogram etc • **Major Tests Offered:** HbA1c,Beta HCG, Erythrocyte Sedimentation Rate(ESR), Free Thyroxine(FT4), Postprandial Blood Sugar etc.
Vijaya Diagnostic	• **Packages offered:** Vijaya PH Bone Health Panel, Vijaya PH Cardiac Profile-Basic/Advanced, Vijaya PH General Health Check, Vijaya PH Gold Package, Vijaya PH Diabetic Profile-Basic/Advanced etc. • **Major Tests Offered:** Glycated Haemoglobin(HbA1c), Thyroid Profile, Lipid Profile, Liver Function Test, ECG, Ultrasound, Prolactin, Beta HCG,MRI, Cytology PAP Smear-LBC, Mammography etc.

Consulting

Break-up by customer segment and types of tests offered in terms of revenue

Companies	Year	B2B vs B2C[1]			Specialised, routine and wellness tests[2]		
Agilus Diagnostics	FY22	45%	55%		54%	40%	6%
	FY23	46%	54%		38%	53%	9%
	FY24	47%	53%		36%	54%	10%
	Q1FY25	46%	54%		34%	54%	12%
Dr Lal PathLabs[3]*	FY22	26%	74%		NA	NA	18%
	FY23	28%	72%		50%	32%	18%
	FY24	27%	73%		NA	NA	22%
	Q1FY25	NA	NA		NA	NA	22%
Metropolis Healthcare[4]	FY22	NA	44%		49%	43%	7%
	FY23	NA	50%		39%	48%	12%
	FY24	38%	53%	10%	35%	50%	15%
	Q1FY25	37%	54%	9%	37%	46%	17%
Suraksha Diagnostics[5]	FY22	4%	96%		10%	88%	3%
	FY23	4%	96%		12%	85%	3%
	FY24	6%	94%		12%	85%	3%
	Q1FY25	6%	94%		12%	83%	6%
Thyrocare[6]	FY22	NA	NA		NA		NA
	FY23	94%	6%		60%		40%
	FY24	94%	6%		NA		NA
	Q1FY25	94%	6%		NA		NA
Vijaya Diagnostic	FY22	6%	94%		NA		NA
	FY23	5%	95%		88%		12%
	FY24	6%	94%		87%		13%
	Q1FY25	7%	93%		87%		13%

Consulting

[1] B2C segment comprises direct customers/patients who are the prime decision-makers and B2B segment comprises hospitals, doctors and corporate bodies, where the management of healthcare institutions and corporate bodies are the prime decision-makers, and not the patients/ customers. It also includes diagnostics tests as a part of clinical trials. However, it should be noted that this definition might vary from player to player, and no such disclosure has been made by the players when disclosing the numbers considered above

[2] Routine and wellness tests are screening tests, comprising basic immunology, haematology and biochemistry tests, with a turnaround time of typically less than 6 hours. Specialised tests help in deep diagnosis and analysis of diseases. Some tests include oncology (cancer markers), genomic and hepatitis testing. However, it should be noted that this definition might vary from player to player, and no such disclosure has been made by the players when disclosing the numbers considered

[3] For Dr Lal PathLabs, specialised segment includes specialised tests and less-frequently ordered tests. Wellness test value is considered based on revenue of its Swasthfit package

[4] For Metropolis Healthcare, routine tests share includes routine and semi-specialised segment share

[5] For Suraksha Diagnostics,
- Advanced tests revenue has been considered as specialised
- For FY24, B2C includes PPP revenue of ~2%
- For FY23, B2C Includes PPP revenue of ~2%
- For FY22, B2C Includes PPP revenue of ~1%

[6] For Thyrocare:
- For Q1FY25, B2B includes revenue from franchise model which contributes 64% and Partnership + B2G Model which contributes 30%; D2C Business revenue of 6% is taken as B2C revenue
- For FY24, B2B includes revenue from franchise model which contributes 65% and Partnership + B2G Model which contributes 29%; D2C Business revenue of 6% is taken as B2C revenue
- For FY23, B2B includes revenue from franchise model which contributes 61% and Partnership + B2G Model which contributes 33%; D2C Business revenue of 6% is taken as B2C revenue
- Wellness segment share is calculated based on Aarogyam package revenue

B2B		B2C		Others
Specialised	Routine		Wellness	
Non-wellness				

Source: Company documents, Company Website, concall transcripts, CRISIL MI&A

- Among the peers considered, Vijaya Diagnostic and Suraksha Diagnostics are the top two in terms of B2C revenue for FY24 with both reporting ~94% of their total revenues coming from B2C channel. For FY22 and FY23, Suraksha Diagnostic had the highest portion of their revenues coming from the B2C channel with ~96% of their total revenues coming from the B2C channel.

Regional presence of players considered

Presence across states and districts

Parameters	Agilus Diagnostics	Dr Lal PathLabs	Metropolis Healthcare	Suraksha Diagnostics	Thyrocare	Vijaya Diagnostic
Presence across Indian states and union territories	30+	34	22+	4	29	6
Presence across Indian districts	532	NA	220*	14	570+	23*

NA: Not available
 * Cities
Source: Annual reports, Company documents, CRISIL MI&A

Presence across districts in West Bengal

Consulting

Presence across West Bengal	No. of districts present
Agilus Diagnostics	8
Dr Lal PathLabs	21
Metropolis Healthcare	10
Suraksha Diagnostics	11
Thyrocare	15
Vijaya Diagnostic	1

Note:
Presence in terms of labs/ centres in West Bengal is taken into consideration
Source: Annual reports, company websites, CRISIL MI&A

4.2 Financial overview

Operating income

Operating income (Rs mn)	FY22	FY23	FY24	Q1FY25	CAGR (FY22- FY24)
Agilus Diagnostics^	16,051.86	13,480.66	13,720.00	3,430.00	-7.55%
Dr Lal PathLabs	20,879.03	20,175.78	22,266.41	6,019.00	3.27%
Metropolis Healthcare	12,283.21	11,482.10	12,077.09	3,133.55	-0.84%
Suraksha Diagnostics	2,231.93	1,901.34	2,187.09	607.32	-1.01%
Thyrocare	5,906.60	5,270.60	5,723.90	1,569.10	-1.56%
Vijaya Diagnostic	4,623.70	4,592.23	5,478.05	1,562.17	8.85%

Notes:
NA: Not Available
^ For Agilus Diagnostics, Operating revenue for FY24 and Q1FY25 is considered which is as reported by Fortis Healthcare Ltd. in its Q4FY24 investor presentation
Q1FY25 numbers is as reported by the companies in their respective quarterly reports and has not been restated by CRIISIL
Operating income of Agilus Diagnostics includes liabilities/provisions that no longer need to be written back, as disclosed in the company's annual report
Operating income includes other miscellaneous income
All values are considered on consolidated basis
All values except FY24 values of Agilus Diagnostics and Q1FY25 quarterly numbers of all the companies are restated as per CRISIL standards
Source: Annual reports, Investor Presentation, CRISIL MI&A

Non-Covid Revenue of key players (in millions)

Non-Covid Revenue (Rs. Mn)	FY22	FY23	FY24	CAGR(FY22-FY24)
Agilus Diagnostics^	11,433.40	12,877.32	13,678.84	9.38%
Dr Lal PathLabs*	16,913.00	19,917.00	22,232.00	14.65%
Metropolis Healthcare%	9355.93	11,040.00	11,660.00	11.64%
Suraksha Diagnostics	1,494.33	1,865.88	2,183.15	20.87%
Thyrocare*	3,758.00	4,572.00	5,061.00	16.05%
Vijaya Diagnostic$	3,930.40	4,500.16	NA	NM

Note: NA: Not Available, NM: Not Meaningful

Consulting

- Suraksha Diagnostics reported the highest CAGR growth of 20.87% in non-covid revenues from FY22-FY24 among the players considered for which data is available.

Operating profit before depreciation, interest, and tax (OPBDIT)

OPBDIT (Rs mn)	FY22	FY23	FY24	Q1FY25	CAGR (FY22- FY24)
Agilus Diagnostics	4,136.39	2,413.29	NA	NA	NA
Dr Lal PathLabs	5,618.20	4,905.30	6,094.60	1,700.00	4.15%
Metropolis Healthcare	3,482.97	2,955.52	2,889.82	788.13	-8.91%
Suraksha Diagnostics	640.93	463.58	722.12	206.04	6.14%
Thyrocare	2,366.90	1,237.20	1,402.40	426.40	-23.03%
Vijaya Diagnostic	2,036.90	1,820.27	2,208.99	612.37	4.14%

Notes: NA: Not Available
All values except Q1FY25 quarterly numbers of all the companies are restated as per CRISIL standards.
For Q1FY25 OPBDIT = Revenue from Operations – Cost of sales
All values are considered on consolidated basis
OPBDIT = operating income – cost of sales
Source: Annual reports, Investor Presentation, CRISIL MI&A

- The OPBDIT of Suraksha Diagnostics increased from Rs.640.93 million in FY22 to Rs. 722.12 million in FY24, growing at a CAGR of 6.14% which is the highest among the players considered during the same period.

Earnings before interest, tax, depreciation, and amortisation (EBITDA)

EBITDA (Rs mn)	FY22	FY23	FY24	Q1FY25	CAGR (FY22- FY24)
Agilus Diagnostics^	7,323.95*	2,626.25	2,090.00	550.00	-46.58%
Dr Lal PathLabs	6,086.19	5,246.20	6,668.08	1,906.00	4.67%
Metropolis Healthcare	3,612.00	3,057.90	2,939.77	812.71	-9.78%
Suraksha Diagnostics	652.53	474.79	736.18	217.21	6.22%
Thyrocare	2,639.60	1,267.60	1,427.4	462.60	-26.46%
Vijaya Diagnostic	2,165.21	1,914.24	2,448.49	648.01	6.34%

* Value includes exceptional item of Rs 3,061.43 million related to gain on remeasurement of previously held equity interest.
Excluding the exceptional item of Rs 3,061.43 million, EBITDA was 4,262.52 million
Notes: NA: Not Available
^ For Agilus Diagnostics, operating EBITDA for FY24 and Q1FY25 is considered which is as reported by Fortis Healthcare Ltd. in its Q4FY24 investor presentation

Consulting

All values except FY24 values of Agilus Diagnostics and Q1FY25 quarterly numbers of all the companies are restated as per CRISIL standards
For Q1FY25 EBITDA = Revenue from Operations + Other Income – Cost of Sales
All values are considered on consolidated basis
EBITDA = OPBDIT + non-operating income
Source: Annual reports, Investor Presentation, CRISIL MI&A

- Suraksha Diagnostics reported the second highest CAGR growth in EBITDA of 6.22% among the considered players where its EBITDA grew from Rs. 652.53 million in FY22 to Rs. 736.18 million in FY24.

Profit after tax (PAT)

PAT (Rs mn)	FY22	FY23	FY24	Q1FY25	CAGR (FY22- FY24)
Agilus Diagnostics	5,547.08	1,166.35	NA	NA	NA
Dr Lal PathLabs	3,502.91	2,410.77	3,623.00	1,078.00	1.70%
Metropolis Healthcare	2,146.86	1,433.94	1,284.56	381.10	-22.65%
Suraksha Diagnostics	208.24	60.65	231.27	76.67	5.38%
Thyrocare	1,761.40	643.60	694.9	239.4	-37.19%
Vijaya Diagnostic	1,106.68	852.07	1,196.37	315.05	3.97%

Notes: NA: Not Available
All values are considered on consolidated basis
For Agilus Diagnostics, PAT for FY22 was higher than OPBDIT due to exceptional items during the year arising from the acquisition of 50% stake in DDRC SRL Diagnostics Pvt Ltd from joint venture partner of Agilus Diagnostics (erstwhile SRL Ltd)
Source: Annual reports, Investor Presentation, CRISIL MI&A

- Among the peers considered, Suraksha Diagnostics reported the highest CAGR growth in PAT of 5.38%, rising from Rs.208.24 million in FY22 to Rs. 231.27 million in FY24.

Working capital cycle

FY24	Inventory days*			Debtor days*			Payable days*			Working capital cycle*		
	FY22	FY23	FY24	FY22	FY23	FY24	FY22	FY23	FY24	FY22	FY23	FY24
Agilus Diagnostics^	17.38	20.11	NA	34.38	39.22	NA	118.25	161.11	NA	(66.49)	(101.79)	NA
Dr. Lal PathLabs	12.57	8.08	8.42	14.93	12.82	12.69	107.11	127.42	150.85	(79.61)	(106.52)	(129.74)
Metropolis Healthcare	21.20	19.09	15.37	40.26	38.75	38.17	79.66	135.59	149.63	(18.20)	(77.75)	(96.09)
Suraksha Diagnostics	14.28	15.64	16.64	11.01	8.98	14.81	82.88	186.99	192.78	(57.59)	(162.36)	(161.33)
Thyrocare	25.29	25.04	40.14	58.50	60.07	27.94	35.56	53.64	87.82	48.24	31.47	(19.75)
Vijaya Diagnostic	6.03	2.70	5.79	7.72	7.55	10.82	110.46	171.80	183.79	(96.71)	(161.56)	(167.17)

Note:
* Values are restated as per CRISIL reclassification standards
*Inventory days = (total Inventory / cost of sales) * 365*
*Debtor days = (total receivables / net sales) * 365*
*Payable days = (creditor for goods / material costs) * 365*
Working capital cycle = inventory days + debtor days - payable days
All values are considered on consolidated basis
Source: Annual reports, Investor Presentation, CRISIL MI&A

Consulting

Key financial ratios (FY24)

OPBDIT Margin (%)

OPBDIT Margin (%)	FY22	FY23	FY24	Q1FY25
Agilus Diagnostics	25.77	17.90	15.30*	16.10*
Dr Lal PathLabs	26.91	24.31	27.37	28.24
Metropolis Healthcare	28.36	25.74	23.93	25.15
Suraksha Diagnostics	28.72	24.38	33.02	33.93
Thyrocare	40.07	23.47	24.50	27.17
Vijaya Diagnostic	44.05	39.64	40.32	39.20

Note: All values are considered on consolidated basis

All values except for FY24 value of Agilus and Q1FY25 quarterly numbers of all the companies are restated as per CRISIL standards

For Agilus Diagnostics, Operating EBITDA margin which is as reported by Fortis Healthcare Ltd. for its Agilus diagnostic business in its Q4FY24 and Q1FY25 investor presentation has been used for FY24 and Q1FY25 respectively

OPBDIT margin = OPBDIT/ Operating income

Source: Annual reports, Investor Presentation, CRISIL MI&A

EBITDA Margin (%)

EBITDA Margin (%)	FY22	FY23	FY24	Q1FY25
Agilus Diagnostics	26.55	19.48	15.30*	16.10*
Dr Lal PathLabs	29.15	26.00	29.95	31.67
Metropolis Healthcare	29.41	26.63	24.34	25.94
Suraksha Diagnostics	29.24	24.97	33.66	35.77
Thyrocare	44.69	24.05	24.94	29.48
Vijaya Diagnostic	46.83	41.68	44.70	41.48

Note: All values are considered on consolidated basis

All values except for FY24 value of Agilus and Q1FY25 quarterly numbers of all the companies are restated as per CRISIL standards

* For Agilus Diagnostics, Operating EBITDA margin which is as reported by Fortis Healthcare Ltd. for its Agilus diagnostic business in its Q4FY24 and Q1FY25 investor presentation has been used for FY24 and Q1FY25 respectively

EBITDA margin = EBITDA / Operating income

Source: Annual reports, Investor Presentation, CRISIL MI&A

- Suraksha Diagnostics reported the second highest EBITDA margin of 33.66% among the considered peers for FY24.

PAT Margin (%)

PAT Margin (%)	FY22	FY23	FY24	Q1FY25
Agilus Diagnostics	34.56	8.65	NA	NA
Dr Lal PathLabs	16.78	11.95	16.27	17.91

Consulting

PAT Margin (%)	FY22	FY23	FY24	Q1FY25
Metropolis Healthcare	17.48	12.49	10.64	12.16
Suraksha Diagnostics	9.33	3.19	10.57	12.62
Thyrocare	29.82	12.21	12.15	15.26
Vijaya Diagnostic	23.93	18.55	21.84	20.17

Note: NA: Not Available

All values except for Q1FY25 quarterly numbers of all the companies are restated as per CRISIL standards

All values are considered on consolidated basis

PAT margin = PAT / Operating income

Source: Annual reports, Investor Presentation, CRISIL MI&A

Gearing

Gearing (Times)	FY22	FY23	FY24
Agilus Diagnostics	0.00	0.00	NA
Dr Lal PathLabs	0.59	0.30	0.08
Metropolis Healthcare	3.58	0.49	0.00
Suraksha Diagnostics	0.13	0.09	0.05
Thyrocare	0.00	0.00	0.05
Vijaya Diagnostic	0.00	0.00	0.00

Note: NA: Not Available

All values are considered on consolidated basis

Gearing = Total debt / Tangible net worth

Source: Annual reports, Investor Presentation, CRISIL MI&A

Net Debt / Equity

	Net Debt / Equity			Net Debt / Equity (Including Intangible assets)		
	FY22	FY23	FY24	FY22	FY23	FY24
Agilus Diagnostics	0.00	0.00	NA	0.00	0.00	NA
Dr Lal PathLabs	0.00	0.00	0.00	0.00	0.00	0.00
Metropolis Healthcare	2.85	1.15	0.47	0.23	0.19	0.11
Suraksha Diagnostics	0.38	0.27	0.20	0.37	0.27	0.20
Thyrocare	0.02	0.01	0.08	0.01	0.01	0.06
Vijaya Diagnostic	0.00	0.24	0.35	0.00	0.23	0.28

Note: NA: Not Available

All values are considered on consolidated basis

0.00 for companies that have negative net debt

Net Debt / Equity = (Total debt + lease liabilities –Total cash and Bank balances) / tangible networth.

Tangible Networth = Total paid-up equity share capital + reserves – intangible assets

Net Debt / Equity (including intangible assets) = (Total debt + lease liabilities –Total cash and Bank balances) / total equity (tangible networth + intangible assets)

Source: Annual reports, Investor Presentation, CRISIL MI&A

Consulting

Quick Ratio, Interest Coverage, NCA / Debt

	Quick Ratio			Interest Coverage			NCA/Debt		
	FY22	FY23	FY24	FY22	FY23	FY24	FY22	FY23	FY24
Agilus Diagnostics^	2.12	1.73	NA	46.46	17.00	NA	282.09	72.68	NA
Dr. Lal PathLabs	1.62	2.00	2.38	20.42	14.16	23.11	0.99	1.22	3.66
Metropolis Healthcare	1.10	0.92	1.10	15.47	9.77	10.65	0.92	2.42	NM
Suraksha Diagnostics	1.43	1.59	1.66	7.38	5.20	8.29	2.59	2.69	6.45
Thyrocare	3.66	2.48	2.56	111.38	27.47	27.27	NM	NM	0.98
Vijaya Diagnostic	3.20	3.99	2.77	13.17	9.37	9.99	257.41	NM	NM

Note: NA: Not Available

NM: Not meaningful, as debt in FY24 was nil

All values are considered on consolidated basis

Quick ratio = (current assets – total inventory – receivables (more than 6 months)) / current liabilities
Interest coverage = profit before depreciation, interest and tax (PBDIT)/ interest and finance charges
NCA/debt = net cash accruals / total debt
Net cash accruals = accretion to reserves + depreciation + miscellaneous expenses written-off – Non-cash adjustment
Accretion to reserves = PAT – dividend
Total Debt = short-term debt + long-term debt
Source: Annual reports, Investor Presentation, CRISIL MI&A

Return ratios (FY24)

Return on Assets (RoA)

RoA	FY22	FY23	FY24
Agilus Diagnostics	2.98	2.19	NA
Dr Lal PathLabs	3.44	2.72	2.84
Metropolis Healthcare	3.65	2.64	2.35
Suraksha Diagnostics	1.07	0.85	0.88
Thyrocare	2.03	1.56	1.52
Vijaya Diagnostic	1.45	0.67	0.64

Note: NA: Not Available

All Values are restated as per CRISIL reclassification standards

All values are considered on consolidated basis

ROA = Operating income / 2-year average of gross block
Source: Annual reports, Investor Presentation, CRISIL MI&A

Return on Capital Employed (RoCE)

	RoCE			RoCE (Capital employed includes lease liabilities but does not include Right-of-use assets)		
	FY22	FY23	FY24	FY22	FY23	FY24
Agilus Diagnostics	81.15	23.62	NA	80.79	23.48	NA
Dr Lal PathLabs	50.83	40.40	51.76	51.55	41.30	51.71

Consulting

	RoCE			RoCE (Capital employed includes lease liabilities but does not include Right-of-use assets)		
	FY22	FY23	FY24	FY22	FY23	FY24
Metropolis Healthcare	64.95	61.72	63.60	64.03	59.69	60.66
Suraksha Diagnostics	22.92	8.92	21.95	23.11	9.05	21.46
Thyrocare	61.82	22.30	24.29	64.20	23.00	24.99
Vijaya Diagnostic	40.73	27.30	34.90	39.44	26.21	32.98

Note: NA: Not Available

Values are restated as per CRISIL reclassification standards

ROCE = EBIT / (Average Tangible networth + Average total debt + Average deferred tax liability)

ROCE (Capital employed includes lease liabilities but does not include Right-of-use assets) = EBIT / (Average Total equity – Average right-of-use assets – Average intangible assets + Average total debt + Average lease liability + Average deferred tax liability).

Source: Annual reports, Investor Presentation, CRISIL MI&A

Return on Equity (RoE) / Return on Networth (RoNW)

	RoE / RoNW (Considering tangible networth)			ROE / RoNW (Considering profit attributable to the owners and including Intangible networth)		
	FY22	FY23	FY24	FY22	FY23	FY24
Agilus Diagnostics	69.32	16.53	NA	34.91	6.12	NA
Dr Lal PathLabs	40.87	35.03	39.67	25.11	15.08	20.35
Metropolis Healthcare	64.96	122.89	61.25	26.86	15.23	12.26
Suraksha Diagnostics	15.63	4.07	13.93	15.38	4.32	14.09
Thyrocare	46.88	14.97	16.22	36.93	12.16	13.34
Vijaya Diagnostic	27.16	17.02	22.62	26.52	16.71	19.77

Note:NA: Not Available

Values are restated as per CRISIL reclassification standards

ROE / RoNW (Considering tangible networth) = PAT / Average Tangible networth

ROE / RoNW (Considering profit attributable to the owners and including intangible networth) = Profit attributable to the owners of the company / (Average equity attributable to the owners of the company)

Source: Annual reports, Investor Presentation, CRISIL MI&A

Other key ratios

Parameters	Cash flow from operations / OPBDIT				Free operating cash flow / OPBDIT			
	FY22	FY23	FY24	3-year average (FY22-FY24)	FY22	FY23	FY24	3-year average (FY22-FY24)
	Times	Times	Times	Times	Times	Times	Times	Times
Agilus Diagnostics^	0.72	0.80	NA	0.64	(1.36)	(0.12)	NA	(0.46)
Dr Lal PathLabs	0.58	0.67	0.49	0.58	0.30	0.49	0.37	0.39
Metropolis Healthcare	0.57	0.68	0.82	0.69	(1.63)	0.11	0.36	(0.38)
Suraksha Diagnostics	1.01	0.78	0.67	0.82	0.69	0.28	(0.10)	0.29

Consulting

Market Intelligence & Analytics

Parameters	Cash flow from operations / OPBDIT				Free operating cash flow / OPBDIT			
	FY22	FY23	FY24	3-year average (FY22-FY24)	FY22	FY23	FY24	3-year average (FY22-FY24)
Thyrocare	0.22	0.37	0.39	0.33	(0.07)	0.01	(0.08)	(0.05)
Vijaya Diagnostic	0.71	0.75	0.71	0.72	(0.19)	(0.39)	(0.38)	(0.32)

Notes: NA: Not Available

^ For Agilus Diagnostics, For the 3-year average cash flow from operations/ OPBDIT, FY21-FY23 average is considered as FY24 numbers were not available

All values are considered on consolidated basis, and are restated as per CRISIL standards

Cashflow from operations = cashflow from operations for debt servicing – interest and finance costs – principal payments

OPBDIT = operating income – cost of sales

Free operating cashflow = cashflow from operations – investments in fixed assets

Source: Annual reports, CRISIL MI&A

Other parameters (FY24)

Face Value/ Share

	Face Value / Share			
	FY22	FY23	FY24	Q1FY25
Agilus Diagnostics	10	10	NA	NA
Dr Lal PathLabs	10	10	10	10
Metropolis Healthcare	2	2	2	2
Suraksha Diagnostics	100	100	100	2
Thyrocare	10	10	10	10
Vijaya Diagnostic	1	1	1	1

Note: NA: Not Available

Source: Annual reports, Quarterly reports, CRISIL MI&A

Earnings per share-basic/diluted

	Earnings per share-Basic* (Rs.)				Earnings per share-Diluted* (Rs.)			
	FY22	FY23	FY24	Q1FY25	FY22	FY23	FY24	Q1FY25
Agilus Diagnostics	70.73	14.87	NA	NA	70.21	14.76	NA	NA
Dr Lal PathLabs	41.70	28.82	43.05	12.79	41.57	28.74	42.98	12.76
Metropolis Healthcare	41.87	27.91	24.95	7.41	41.66	27.81	24.87	7.37
Suraksha Diagnostics%	301.80	94.43	342.41	1.49	244.17	76.40	277.02	1.49
Thyrocare	33.30	12.16	13.42	4.52	33.25	12.14	13.40	4.51
Vijaya Diagnostic	10.76	8.29	11.62	3.06	10.69	8.26	11.59	3.05

Note: NA: Not Available

* Earnings per share (Basic/Diluted) for all the companies except Suraksha diagnostics is as reported by the companies in its annual reports

% For Suraksha Diagnostics, EPS for Q1FY25 is as reported by the company in its Q1FY25 quarterly report and EPS for FY22, FY23 and FY24 calculated as follows

EPS-Basic= Profit attributable to the owners of the parent/Equity shares

EPS-Diluted= Profit attributable to the owners of the parent / (Equity shares + Instruments entirely equity in nature)

Consulting

For Suraksha Diagnostics, Pursuant to resolution passed by the Board and Shareholders dated 15 May 2024 and 17 May 2024, respectively, each equity shares of face value of Rs 100 each of Holding Company has been split into fifty equity shares of face value of Rs 2 each. Accordingly, the issued, subscribed, and paid-up capital of Holding Company has been sub-divided from 6,90,000 equity shares of face value of Rs 100 each to 3,45,00,000 equity shares of face value of Rs 2 each. Subsequent to period end March 31, 2024, the Holding Company has allotted 86,24,997 equity shares of Rs.2 each as bonus shares in proportion of 1 bonus equity shares of Rs. 2 each for every four equity share of Rs 2 each. This has been approved by Board and Shareholders on 15 May 2024 and 17 May 2024, respectively. Basis this, using the formula (equity attributable to the owners of the company / weighted average number of equity shares outstanding during the year) the Book Value (NAV)-Basic/diluted comes out to be Rs. 33.66. Post this corporate action, the company reported the EPS-Basic and EPS-Diluted to be Rs. 4.43

Source: Annual reports, CRISIL MI&A

Book Value-Basic/Diluted

	Book value (NAV)-Basic (Rs.)			Book value (NAV)- Diluted (Rs.)
	FY22	**FY23**	**FY24**	**FY24**
Agilus Diagnostics	237.95	248.08	NA	N.Ap
Dr Lal PathLabs	180.17	199.87	221.53	N.Ap
Metropolis Healthcare	173.56	192.97	213.98	N.Ap
Suraksha Diagnostics	2,113.65	2,259.80	2,600.12	2,103.61
Thyrocare	99.54	100.94	99.48	N.Ap
Vijaya Diagnostic	45.92	53.37	64.21	N.Ap

Note: N.Ap: Not Applicable
All values are considered on a consolidated basis
Book Value(NAV)-Basic = (Equity attributable to the owners of the company) / (Total paid up equity share capital / Face value per share)
Book Value(NAV)-Diluted = (Equity attributable to the owners of the company) / (Total equity shares + Instruments entirely equity in nature)
Source: Annual reports, CRISIL MI&A

Other key parameters

Operating income per test

Operating income / test (Rs)	**FY22**	**FY23**	**FY24**	**Q1FY25**
Agilus Diagnostics^	363.33	345.04	343.00	345.77
Dr Lal PathLabs	316.35	279.06	284.74	285.26
Metropolis Healthcare	472.43	453.84	503.21	497.39
Suraksha Diagnostics	447.00	367.92	365.64	384.38
Thyrocare	53.55	37.27	38.93	38.55
Vijaya Diagnostic	496.11	456.94	460.73	462.18

NA: Not available
Notes:
^ For Agilus Diagnostics, Operating revenue for FY24 and Q1FY25 is considered which is as reported by Fortis Healthcare Ltd. in its Q4FY24 and Q1FY25 investor presentation respectively
For Q1FY25, the operating Income is as reported by the company in its quarterly financials and has not been restated as per CRISIL Standards

Consulting

Values are rounded off to the nearest zero decimal value for consistency, as not all companies report the values in single or double decimal. CRISIL has calculated the numbers using operating income, which has been restated as per CRISIL standards, and used the test numbers reported by the respective companies
Values are calculated using (operating income / no. of tests conducted)
Operating income for all the players is considered on consolidated basis
Source: Annual reports, Company Documents, CRISIL MI&A

- Among the players considered, Suraksha Diagnostics reported third highest operating income per test of Rs. 365.64 in FY24.

Operating income per accession

Operating income/ patient (Rs)	FY22	FY23	FY24	Q1FY25
Agilus Diagnostics^	750.09	811.11	836.59	857.50
Dr Lal PathLabs	764.80	750.03	806.75	835.97
Metropolis Healthcare	916.66	941.16	1,006.42	1,030.77
Suraksha Diagnostics	1,317.81	1,711.58	1,922.44	2,146.01
Thyrocare	361.92	342.25	381.59	382.71
Vijaya Diagnostic	1,277.26	1,444.10	1,543.11	1,627.26

NA: Not available
Notes:
^ For Agilus Diagnostics, Operating revenue for FY24 and Q1FY25 is considered which is as reported by Fortis Healthcare Ltd. in its Q4FY24 and Q1FY25 investor presentation respectively
For Q1FY25, the operating Income is as reported by the company in its quarterly financials and has not been restated as per CRISIL Standards
Operating income per accession is defined as revenue generated by the company per patient
Values are rounded off to the nearest zero decimal value for consistency, as not all companies report the values in single or double decimal. CRISIL has calculated the numbers using operating income, which has been restated as per CRISIL standards, and used the test numbers reported by the respective companies
Values are calculated using (operating income / no. of patients)
Operating income for all player is considered on consolidated basis.
Source: Annual reports, Company Documents, CRISIL MI&A

OPBDIT per test

OPBDIT / test (Rs)	FY22	FY23	FY24	Q1FY25
Agilus Diagnostics	93.63	61.77	NA	NA
Dr Lal PathLabs	85.12	67.85	77.92	80.57
Metropolis Healthcare	133.96	116.82	120.41	125.10
Suraksha Diagnostics	128.36	89.70	120.73	130.41
Thyrocare	21.46	8.75	9.54	10.48
Vijaya Diagnostic	218.55	181.12	185.79	181.17

NA: Not available
Notes:
Q1FY25 OPBDIT for all the companies is calculated based on quarterly reports and has not been restated as per CRISIL Standards
OPBDIT = operating income – cost of sales

Consulting

Operating income for all players is considered on consolidated basis.
Values are calculated using (OPBDIT / no. of tests conducted)
Source: Annual reports, Company Documents, CRISIL MI&A

OPBDIT per patient

OPBDIT/ patient (Rs)	FY22	FY23	FY24	Q1FY25
Agilus Diagnostics	193.29	145.20	NA	NA
Dr Lal PathLabs	205.79	182.35	220.82	236.11
Metropolis Healthcare	259.92	242.26	243.82	259.25
Suraksha Diagnostics	378.43	417.31	634.74	728.06
Thyrocare	145.03	80.34	93.49	104.00
Vijaya Diagnostic	562.68	572.41	622.25	637.89

NA: Not available
Notes:
Q1FY25 OPBDIT for all the companies is calculated based on quarterly reports and has not been restated as per CRISIL Standards
OPBDIT = operating income – cost of sales
Operating income for all players is considered on consolidated basis
Values are calculated using (OPBDIT / no. of patients)
Source: Annual reports, Company Documents, CRISIL MI&A

- In FY24, Suraksha Diagnostics had the highest OPBDIT/Patient of Rs. 634.74 among the considered peers.

EBITDA per patient

EBITDA/ patient (Rs)	FY22	FY23	FY24	Q1FY25
Agilus Diagnostics	342.24*	158.02	127.44	137.50
Dr Lal PathLabs	222.94	195.03	241.60	264.71
Metropolis Healthcare	269.55	250.65	244.98	267.34
Suraksha Diagnostics	385.28	427.40	647.10	767.53
Thyrocare	161.74	82.31	95.16	112.83
Vijaya Diagnostic	598.12	601.96	689.71	675.01

NA: Not available
Notes:
Q1FY25 EBITDA for all the companies except Agilus is calculated based on quarterly reports and has not been restated as per CRISIL Standards
^ For Agilus Diagnostics, Operating EBITDA for FY24 and Q1FY25 is considered which is as reported by Fortis Healthcare Ltd. in its Q4FY24 investor presentation
*For Agilus, In FY22. The Value for EBITDA used for calculation includes exceptional item of Rs 3,061.43 million related to gain on remeasurement of previously held equity interest. Excluding the exceptional item of Rs 3,061.43 million, EBITDA was 4,262.52 million
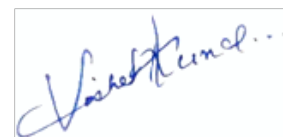*EBITDA = OPBDIT + non-operating income*
Values are calculated using (EBITDA / no. of patients)
Source: Annual reports, Company Documents, CRISIL MI&A

Consulting

- In FY24, Suraksha Diagnostics had the second highest EBITDA/Patient of Rs. 647.10 among the considered peers.

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Argentina | Australia | China | Hong Kong | **India** | Japan | Poland | Singapore | Switzerland | UAE | UK | USA
CRISIL Limited: CRISIL House, Central Avenue, Hiranandani Business Park, Powai, Mumbai – 400076. India
Phone: + 91 22 3342 3000 | Fax: + 91 22 3342 3001 | www.crisil.com

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