



1Lattice



Medical devices market industry report 29th December 2025



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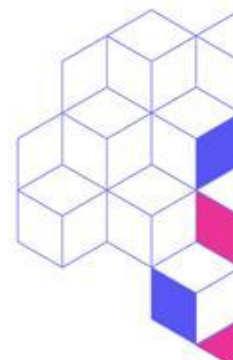
- 2.1. Global healthcare expenditure grew at 5.4% CAGR from CY19 to reach US\$ 10,130.3B in CY22 with the U.S. allocating 16.5% of GDP in CY22 while India and China still have significant room to increase healthcare spending
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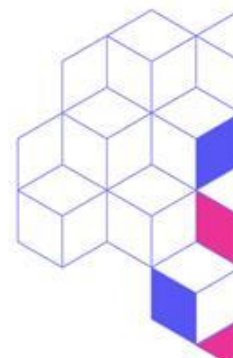


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GLOSSARY OF ABBREVIATIONS USED

S. No	Abbreviation used	Full form
1	AAMI	Association for the Advancement of Medical Instrumentation
2	AI	Artificial Intelligence
3	APAC	Asia Pacific
4	AR	Augmented Reality
5	ASCs	Ambulatory Surgical Centres
6	ASTM	American Society for Testing and Materials
7	B	Billion
8	BiPAP	Bilevel Positive Airway Pressure
9	B2B	Business-to-Business
10	CAD/CAM	Computer-Aided Design/Computer-Aided Manufacturing
11	CAGR	Compounded Annual Growth Rate
12	Cath	Catheterization
13	CBCT	Cone Beam Computed Tomography
14	CDSCO	Central Drugs Standard Control Organisation
15	CE	Conformité Européenne (European Conformity marking)
16	CHE	Current Health Expenditure
17	CMF	Cranio-Maxillofacial
18	CPAP	Continuous Positive Airway Pressure
19	CRT	Cardiac Resynchronisation Therapy
20	CSF	Cerebrospinal Fluid
21	CV	Cardiovascular
22	CT	Computed Tomography
23	CY	Calendar Year
24	DBS	Deep Brain Stimulation
25	DCGI	Drug Controller General of India
26	DEXA	Dual-Energy X-ray Absorptiometry
27	ECG	Electrocardiogram
28	EEG	Electroencephalogram
29	EN	European Norms
30	FDA	Food and Drug Administration
31	FDI	Foreign Direct Investment
32	FY	Financial Year
33	GDP	Gross Domestic Product
34	GEM	Government e-Marketplace
35	GMP	Good Manufacturing Practices
36	HA	Hydroxyapatite
37	ICDs	Implantable Cardioverter-Defibrillators
38	IOL	Intraocular Lens
39	INR	Indian Rupee
40	IOLs	Intraocular lenses



41	ISO	International Organisation for Standardisation
42	IV	Intravenous
43	IVD	In Vitro Diagnostic
44	K	Thousand
45	LP	Lumboperitoneal
46	M	Million
47	MDD	Medical Devices Directive
48	MDR	Medical Device Reporting
49	MDR	Medical Devices Rules
50	MIS	Minimally Invasive Surgery
51	MNCs	Multinational Corporations
52	MoHFW	Ministry of Health & Family Welfare
53	MRI	Magnetic Resonance Imaging
54	MvPI	Materiovigilance Programme of India
55	OCT	Optical Coherence Tomography
56	OR	Operating Room
57	OTC	Over-the-Counter
58	PET	Positron Emission Tomography
59	PFCE	Private Final Consumption Expenditure
60	PGA	Polyglycolic Acid
61	PLA	Polylactic Acid
62	PLI	Production Linked Incentive
63	PMA	Premarket Approval
64	PMMA	Polymethyl Methacrylate
65	PPE	Personal Protective Equipment
66	PRP	Platelet Rich Plasma
67	R&D	Research & Development
68	RNS	Responsive Neurostimulation
69	SLT	Selective Laser Trabeculoplasty
70	T	Trillion
71	TAVR	Transcatheter Aortic Valve Replacement
72	UDI	Unique Device Identification
73	US\$	United States Dollar
74	VA	Ventriculoarterial
75	VNS	Vagus Nerve Stimulation
76	VP	Ventriculoperitoneal
77	VR	Virtual Reality
78	WEF	World Economic Forum
79	WHO	World Health Organisation
80	YAG	Yttrium Aluminium Garnet (laser)
81	YTD	Year-to-Date



EXCHANGE RATE TABLE

Year (FY)	INR equivalent of one US\$	Euro equivalent of one US\$	Year (CY)	INR equivalent of one US\$	Euro equivalent of one US\$
2015-16	66.33	0.88	2016	67.95	0.95
2016-17	64.84	0.93	2017	63.93	0.83
2017-18	65.04	0.81	2018	68.36	0.88
2018-19	69.17	0.89	2019	69.89	0.89
2019-20	70.49	0.93	2020	74.18	0.83
2020-21	73.20	0.85	2021	74.50	0.83
2021-22	74.50	0.86	2022	76.10	0.91
2022-23	80.32	0.96	2023	82.31	0.93
2023-24	82.59	0.93	2024	83.67	0.92
2024-25	84.56	0.93	2025 (YTD)	86.26	0.90

Source: X-rate Monthly average



1. Global and India macroeconomic scenario

1.1. The global real GDP is expected to rise at 3.1% CAGR from CY24-29P, while India is expected to grow at 6.4% CAGR from CY24-29P

Global real GDP has increased by 3.3% in CY24, despite challenges such as higher interest rates, tighter financial conditions, and geopolitical tensions, including Russia's ongoing war in Ukraine, rising conflict in the Middle East, turbulent USA-China relations with sanctions spanning sectors from solar cells to computer chips, and rising uncertainty about US tariffs is leading to global trade tensions. The Indian healthcare market recorded a year-on-year growth of approximately 6.5% in calendar year 2024 and is expected to grow at a CAGR of approximately 6.4% between calendar years 2024 and 2029, driven by structural factors such as increasing demand for healthcare services

Real GDP growth – World, India, China, Germany, USA, UK
(%, CY19-29P)

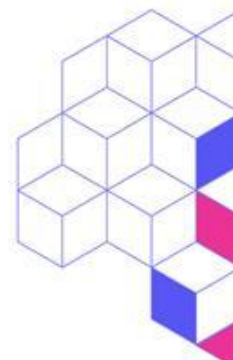
Top economies						
	World	India	China	Germany	USA	UK
CY19	2.9%	3.9%	6.1%	1.0%	2.6%	1.6%
CY20	-2.7%	-5.8%	2.3%	-4.1%	-2.2%	-10.3%
CY21	6.6%	9.7%	8.6%	3.7%	6.1%	8.6%
CY22	3.6%	7.6%	3.1%	1.4%	2.5%	4.8%
CY23	3.5%	9.2%	5.4%	-0.3%	2.9%	0.4%
CY24	3.3%	6.5%	5.0%	-0.2%	2.8%	1.1%
CY25E	3.0%	6.4%	4.8%	0.1%	1.9%	1.2%
CY26P	3.1%	6.4%	4.2%	0.9%	2.0%	1.4%
CY27P	3.2%	6.5%	4.2%	1.5%	2.0%	1.5%
CY28P	3.2%	6.5%	4.1%	1.2%	2.1%	1.5%
CY29P	3.2%	6.5%	3.7%	1.0%	2.1%	1.4%
CAGR* CY19-24	2.8%	5.3%	4.9%	0.1%	2.4%	0.7%
CAGR* CY24-29P	3.1%	6.4%	4.0%	0.9%	1.8%	1.5%

Note(s): CAGRs calculated are 1Lattice estimate; For global data showcasing CY19-24-29P and for India showcasing FY20-25-30P
Source(s): International Monetary Fund (World Economic Outlook: April 2025), 1Lattice analysis

1.1.1. **Growth drivers of Indian GDP: Rising consumer spending, technological advancements, FDIs, government reforms, healthcare sector expansion, and skilled workforce are fuelling the India's GDP growth**

India is the fourth largest economy in the world and is expected to be the third largest by FY30P on the back of rising demand, robust growth in various sectors, and increased private consumption. Indian private consumption expenditure is expected to grow, driven by a rising share of the working-age population, both male and female, along with increasing household incomes. India's GDP growth is driven by factors such as:

- **Rising consumer spending and disposable income:** As per World Economic Forum (WEF), India's private consumption, which accounts for over 60% of GDP, continues to grow, projected to exceed US\$ 6T by CY30P, driving broader economic expansion. Rising disposable incomes are fuelling this increase in consumer spending, leading households to allocate a higher share towards healthcare, including hospital care, insurance, diagnostics, and preventive health solutions.
- **Technological advancements & digital economy:** Digital adoption is reshaping India's economic growth story, with healthcare emerging as one of the most dynamic beneficiaries. From telemedicine and AI-enabled diagnostics to digital insurance platforms, technology is enhancing access, affordability, and efficiency of care, while simultaneously creating new value chains that feed directly into GDP expansion.
- **Foreign Direct Investment (FDI) & 'Make in India':** FDI inflows, supported by initiatives like 'Make in India', boost industrial growth, employment, and exports, strengthening the economy. Since the inception of "Make in India", the nominal GDP of India has increased from INR 106.5T in FY14 to INR 331.0T in FY25.
- **Government reforms & policy support:** Government reforms are strengthening both the economy and the healthcare ecosystem. Initiatives such as GST rationalisation, PLI schemes, and the Ayushman Bharat Health Infrastructure Mission are driving investment in healthcare infrastructure and domestic medical device manufacturing, while creating jobs across hospitals, and allied healthcare services. The expansion of Ayushman Arogya Mandirs and wider insurance coverage is improving healthcare access and productivity, supporting overall GDP growth.



- **Healthcare sector expansion:** India's healthcare sector is witnessing robust growth, driven by rising demand for quality medical services, deeper health insurance penetration, and government initiatives like Ayushman Bharat. The expansion of hospitals and healthcare infrastructure is not only improving access to care and reducing disease burden but also enhancing workforce productivity. This growth is contributing directly to India's GDP while generating significant employment opportunities.
- **Skilled talent pool & expanding workforce:** India's growing skilled workforce across healthcare, engineering, and technology is improving productivity and innovation nationwide. The medical devices value chain depends heavily on highly trained technicians, engineers, and clean-room specialists skilled in sterility management, precision tooling, and regulatory documentation. In the healthcare ecosystem, this includes trained doctors, nurses, technicians, and biomedical professionals, which supports better hospital services, faster adoption of medical devices, and the growth of domestic healthcare manufacturing, contributing to overall GDP expansion.

1.2. World nominal GDP is projected to reach US\$ 137.7T by CY29P, led by 5.4% growth in developing economies and 3.8% in advanced economies during CY24-29P

Global nominal GDP was US\$ 110.5T in CY24 and is expected to reach US\$ 137.7T by CY29P, growing at a CAGR of 4.5%. Advanced economies such as the US, UK, Japan, and Germany are likely to grow steadily at 3.8% CAGR during CY24-29P, reaching US\$ 78.0T by CY29P, supported by stable demand and higher investments in innovation and healthcare systems. In comparison, emerging and developing economies including India, China, Indonesia, and Vietnam are projected to grow faster at 5.4% CAGR during the same period. Within this group, India, with a nominal GDP of US\$ 3.9T in CY24, is the second-largest economy after China and is expected to reach ~US\$ 6.1T by CY29P with a CAGR of 9.5% in CY24-29P. This shift is expected to drive greater spending on healthcare infrastructure and medical equipment as economies continue to prioritise access and quality of care.

Nominal GDP - Global economies
(US\$ T CY19-29P)

Global economies	CY19	CY22	CY24	CY29P	CAGR (CY19-24)	CAGR (CY24-29P)
World	88.0	101.9	110.5	137.7	4.7%	4.5%
Advanced economies*	52.4	58.8	64.7	78.0	4.3%	3.8%
Emerging markets and developing countries*	35.6	43.1	45.8	59.7	5.2%	5.4%
India	2.8	3.3	3.9	6.1	6.6%	9.5%

Note(s): *Advanced economies include Canada, France, Germany, Italy, Japan, United Kingdom, United States, etc. *Emerging markets and developing countries include China, India, Indonesia, Malaysia, Philippines, Thailand, Vietnam, etc.

Source(s): International Monetary Fund (World Economic Outlook: April 2025), 1Lattice analysis

1.3. Global inflation declined from 8.6% in CY22 to 5.7% in CY24, and is expected to ease further to 3.2% by CY29P

Global inflation, which had surged to 8.6% in CY22, reduced to 6.6% in CY23 and further to 5.7% in CY24. It is projected to gradually decline to 3.2% by CY29P, with major advanced economies expected to reach 2.1% in CY29P. Sub-Saharan Africa recorded the highest levels at 18.3% in CY24, followed by Latin America at 16.6%, while Emerging Asia remained relatively moderate at 2.0% in CY24. Inflation trends have a direct bearing on consumer demand and healthcare affordability, while also influencing input costs and supply chains in the medical devices sector, making stability in prices an important enabler of long-term growth. Cost inflation in key raw materials is typically difficult to fully pass through to customers, compressing industry margins during periods of volatility.



Global inflation - Global economies
(%, CY19-29P)

Global economies	CY19	CY22	CY24	CY29P
World	3.5%	8.6%	5.7%	3.2%
Major advanced economies (G7)*	1.5%	7.3%	2.7%	2.1%
Euro area*	1.2%	8.4%	2.4%	2.0%
Emerging Asia*	3.3%	3.9%	2.0%	2.7%
Emerging Europe	6.5%	25.2%	16.8%	6.2%
Latin America and the Caribbean	7.6%	14.2%	16.6%	3.6%
Middle East and Central Asia	7.4%	13.4%	14.4%	6.3%
Sub-Saharan Africa	8.7%	15.2%	18.3%	7.2%

Note(s): *G7 includes Canada, France, Germany, Italy, Japan, USA, and UK. *Euro area consists of advanced economies like Germany, France, Italy, Spain, Netherlands, etc. *Emerging Asia includes China, India, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam
Source(s): International Monetary Fund (World Economic Outlook: April 2025), 1Lattice analysis

1.4. India's per capita income stood at US\$ 2.7K in CY24 and is expected to reach US\$ 4.1K by CY29P

India's per capita income is expected to rise from US\$ 2.7K in CY24 to US\$ 4.1K by CY29P, growing at a CAGR of 8.6%. The increase is expected to be driven primarily by strong services sector performance, particularly in IT & business services, financial services, and healthcare, along with steady growth in manufacturing, higher agricultural output, and robust government spending. This makes India the fastest-growing major economy, ahead of China (5.7%), the UK (4.5%), the USA (3.5%), and Germany (2.9%).

Global GDP per capita – India, China, Germany, USA, UK, World
(US\$, CY19-29P)

Top economies	CY19	CY22	CY24	CY29P	CAGR CY19-24	CAGR CY24-29P
India 	2,050.2	2,361.1	2,711.4	4,089.5	5.4%	8.6%
China 	10,342.9	12,968.2	13,312.7	17,575.9	4.8%	5.7%
Germany 	47,623.9	49,725.3	54,989.8	63,650.0	1.9%	2.9%
USA 	65,228.0	77,801.4	85,812.2	1,01,880.8	5.2%	3.5%
UK 	42,794.0	46,233.8	52,648.2	65,717.5	3.3%	4.5%
World 	11,553.6	13,030.3	13,933.3	16,605.3	3.8%	3.6%

Source(s): International Monetary Fund (World Economic Outlook: April 2025), 1Lattice analysis

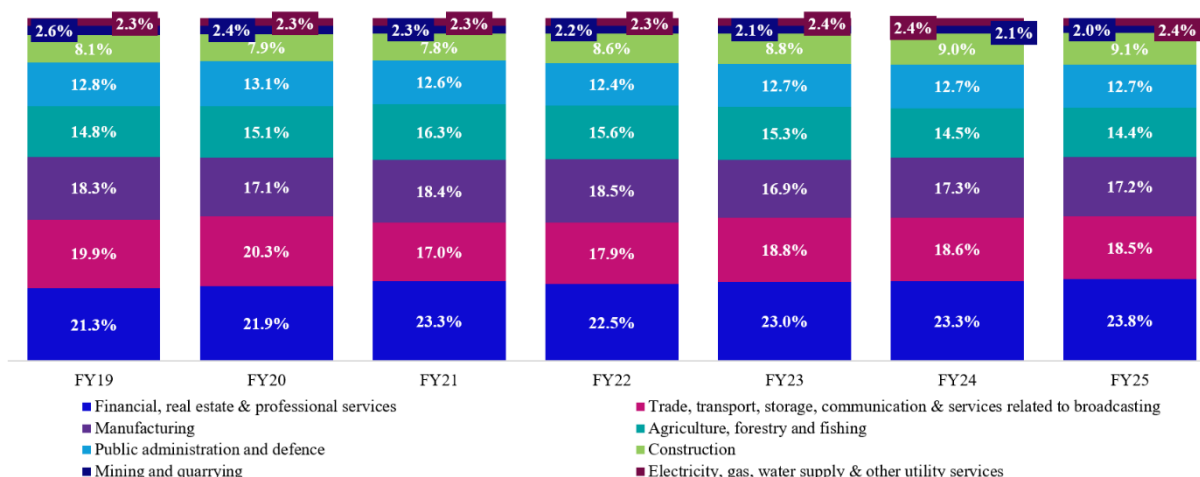
1.5. Manufacturing contributed 17.2% of GVA in FY25, with key sectors like automobiles, chemicals and healthcare driving India's industrial growth

In FY25, India's manufacturing sector contributed 17.2% to nominal GVA, reflecting steady performance following recent fluctuations. The sector's contribution ranged from 16.9% to 18.5% between FY19 and FY25, highlighting its resilience. Key manufacturing segments include automobiles, chemicals, textiles, and machinery, alongside healthcare, pharmaceuticals, and medical devices. The sector remains central to industrial output, supported by construction (9.1%) and trade, transport, and



storage services (18.5%) that enable infrastructure development and supply-chain efficiency. Together, these sectors strengthen industrial resilience and support growth in high-value manufacturing areas such as healthcare and medical devices.

GVA by economic activity at constant prices
(%, FY19-25)

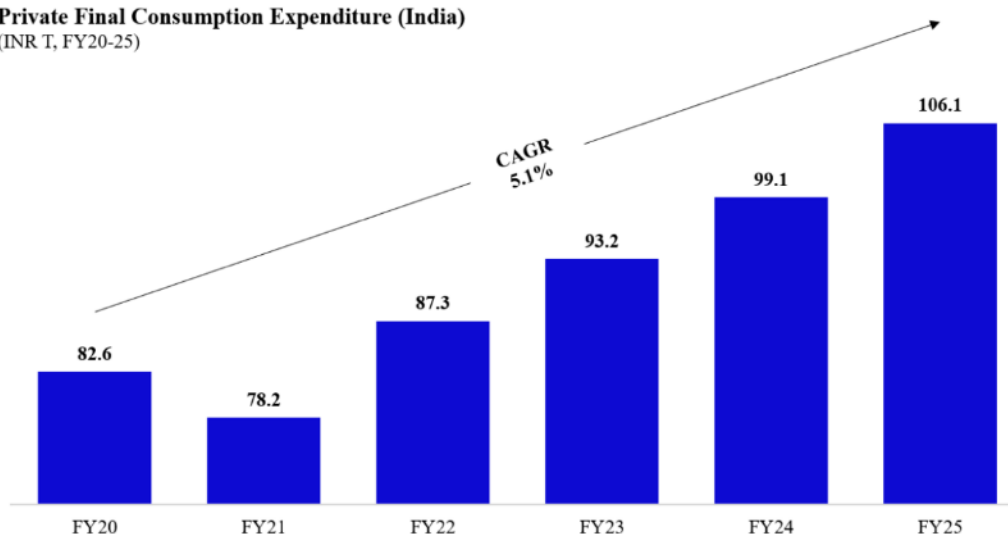


Source(s): Ministry of Statistics and Programme Implementation, 1Lattice Analysis

1.6. Private final consumption expenditure is projected to grow to INR 106.1T in FY25, up from INR 99.1T in the previous year, indicating a rebound in household spending

Private final consumption expenditure (PFCE), a critical component of GDP, measures household spending on goods and services and is a key barometer of domestic demand and overall economic momentum. In India, PFCE remains a primary driver of growth, highlighting the country's consumption-led economic model. For FY20, PFCE was estimated INR 82.6T, with projections indicating a growth rate of 5.1% in FY25. Consumption remains the largest contributor to GDP, with the PFCE-to-GDP ratio at 56.1%. This reflects a balanced growth trajectory, as investment and exports are increasingly contributing alongside robust household spending.

Private Final Consumption Expenditure (India)
(INR T, FY20-25)



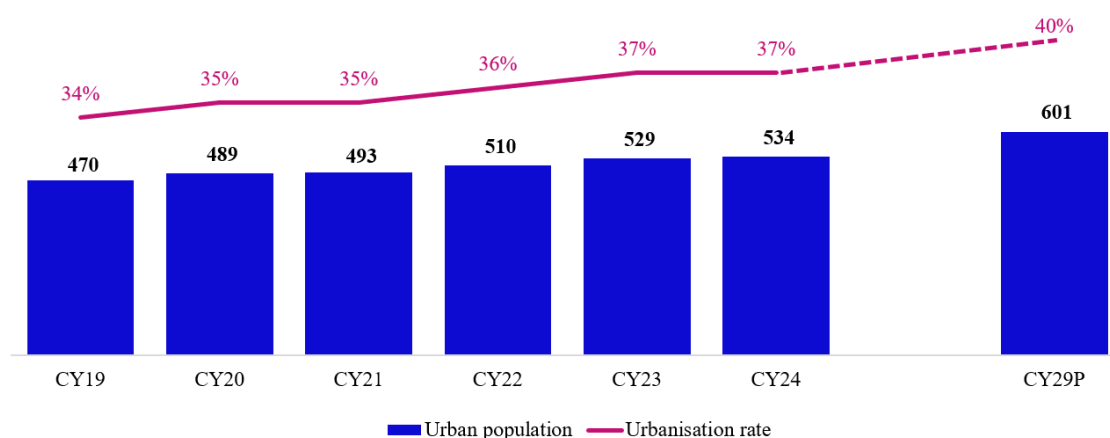
Source(s): Ministry of Statistics and Programme Implementation, 1Lattice analysis



1.7. Share of the urban population in India as percentage of the overall population is expected to rise from ~37% in CY24 to ~40% in CY29P

India's urban population is projected to increase from about ~37% in CY24 to ~40% by CY29P, this urbanisation fuels demand for modern residential infrastructure, better living standards, and improved access to essential services, including quality healthcare facilities and advanced medical support. Further, digitalisation is making urban centres hubs of opportunity. High-speed internet, robust communication networks, and the expansion of digital services are enabling wider adoption of advanced healthcare services, including clinical consultations, medical implants, diagnostics and e-pharmacies.

Urban population & urbanisation rate in India
(M, %, CY19-29P)

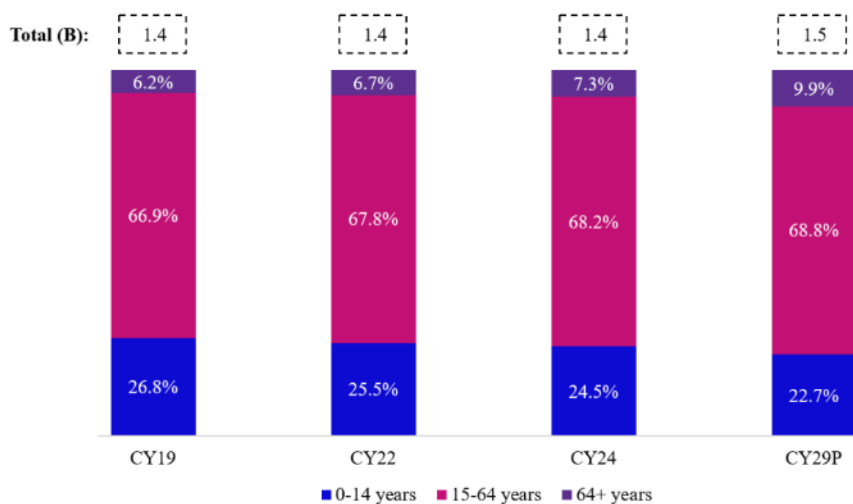


Source(s): World Bank, 1Lattice analysis

1.8. India's median age is expected to increase to 30.4 years by CY29P from 28.4 years in CY24, while countries like Germany and China have higher median ages at 46.1 years and 42.3 years in CY24

During the period CY19-24, the working-age population (15-64 years) accounted for a dominant 66-68% of the total population, while the child demographic (0-14 years) comprised 25-27%, and the elderly (64+ years) made up ~6-8%. The 15-64 years age group, which has the highest share, is expected to grow to 68.8% by CY29P, while the 0-14 years age group population is expected to decline to 22.7% in CY29P. The size of India's workforce is a major competitive advantage as India tries to become a global design and manufacturing hub.

Age-wise population breakdown – India
(%, CY19-29P)



Source(s): World Bank, Economic and Social Commission for Asia & Pacific, 1Lattice analysis



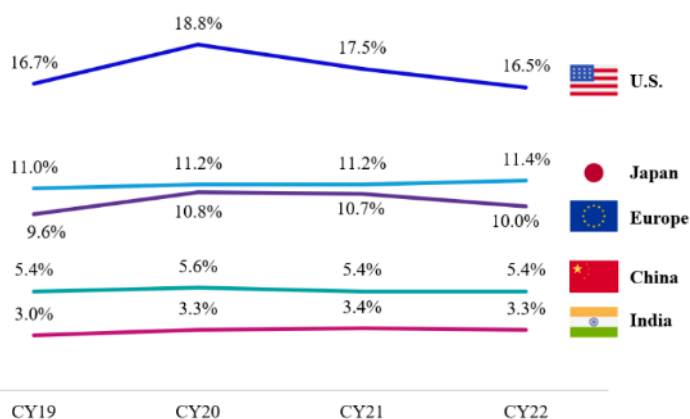
2. Global and India healthcare expenditure overview

2.1 Global healthcare expenditure grew at 5.4% CAGR from CY19 to reach US\$ 10,130.3B in CY22 with the U.S. allocating 16.5% of GDP in CY22 while India and China still have significant room to increase healthcare spending

Global healthcare expenditure grew from US\$ 8,654.3B in CY19 to US\$ 10,130.3B in CY22, with a CAGR of 5.4%. Developed economies continue to allocate a significantly higher share of their GDP to healthcare, led by the U.S. at 16.5%, followed by Japan at 11.4% and Europe at 10.0%. In contrast, China and India spent just 5.4% and 3.3% of GDP respectively, underscoring a wide disparity and substantial growth potential. As income levels rise, insurance penetration improves and infrastructure expands, emerging markets are expected to increase their healthcare allocation, driving sustained demand for hospital care, surgical devices, and advanced medical technologies over the long term.

Region	Healthcare expenditure (US\$ B)				
	CY19	CY20	CY21	CY22	CAGR% (CY19-22)
 World	8,654.3	9,352.6	10,171.4	10,130.3	5.4%
 U.S.	3,562.3	3,962.2	4,081.6	4,246.8	6.0%
 Europe	2,088.0	2,269.5	2,568.8	2,393.6	4.7%
 China	767.3	831.4	956.1	958.4	7.7%
 Japan	561.4	566.7	563.4	486.2	(4.7%)
 India	84.3	89.5	106.8	110.9	9.8%

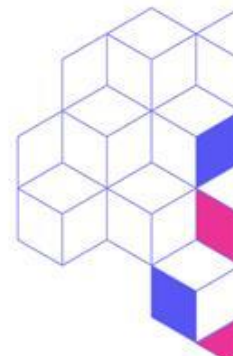
Healthcare expenditure (% of GDP)
(%, CY19-22)



Source(s): WHO-Global Health Expenditure Database, 1Lattice analysis

2.2 Rising chronic conditions, government initiatives, medical tourism, private investments, population ageing, insurance penetration, and med-tech innovations are fuelling India's healthcare expenditure

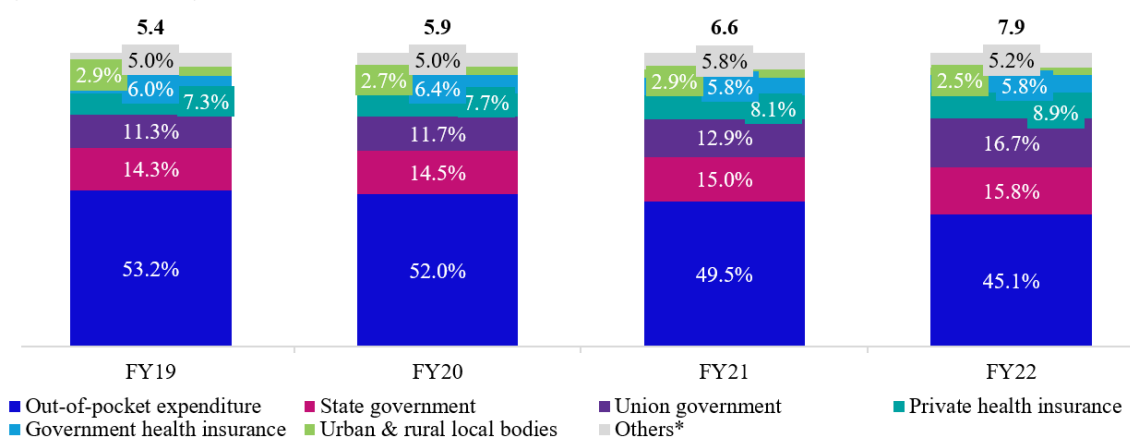
India's healthcare sector is expanding rapidly, driven by rising chronic conditions, supportive government initiatives, growing medical tourism, increasing private investment, an ageing population, expanding insurance penetration, and advancements in medical technology. These factors are collectively driving higher demand for surgeries, devices, and advanced treatments.



Growth drivers		
	Rising chronic conditions	- Rising prevalence of diabetes, hypertension, cardiovascular, and orthopedic conditions fuels sustained demand for healthcare services and device-supported interventions - India accounts for 89.8M diabetes cases in CY24, with diabetes-related healthcare spending reaching US\$ 9.8B, including costs for insulin & oral antidiabetic medications, fuelling demand for healthcare services
	Government initiatives	- Government programs such as Ayushman Bharat and National Health Mission are improving affordability and access to surgeries - Wider financial protection and reduced out-of-pocket costs increase uptake of hospital-based care and surgical treatments
	Expanding medical tourism	- India's global cost advantage and skilled surgeons attract international patients seeking affordable orthopedic care - High-value procedures such as cardiac, oncology, reproductive, and neuro surgeries are driving incremental demand for implants, consumables, and surgical technologies
	Growing private investment	- Private equity and corporate inflows are expanding hospitals and specialty surgical centres, enhancing infrastructure and surgical capacity - Stronger private sector presence improves infrastructure, surgical capacity, service quality, and adoption of advanced medical practices
	Rising population aging	- Longer life expectancy and a growing elderly base is creating higher demand for surgeries across multiple specialties, including neurosurgery, cardiology, oncology, ophthalmology, and general care - Rapidly expanding elderly base creates greater need for implants, consumables, and advanced medical devices
	Surging insurance penetration	- India's insurance penetration reached 3.7% of GDP in FY24, indicating expanding financial capacity to fund healthcare - Insurance coverage through government, employer, and private schemes is lowering out-of-pocket costs and increasing use of surgical procedures, implants, and consumables
	Advancing med-tech innovations	- Surging adoption of digital tools, robotics, and telemedicine is improving surgical accuracy and hospital efficiency - Growth in domestic med-tech innovation and medical equipment manufacturing is driving availability of advanced implants and devices at lower cost

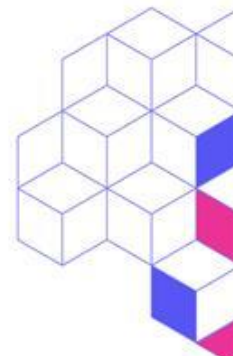
2.3 India's healthcare expenditure by financing schemes grew from INR 5.4T in FY19 to INR 7.9T in FY22 with out-of-pocket share reduced from 53.2% in FY19 to 45.1% in FY22

Healthcare expenditure by financing schemes (% of CHE¹) – India
(INR T, %, FY19-22)



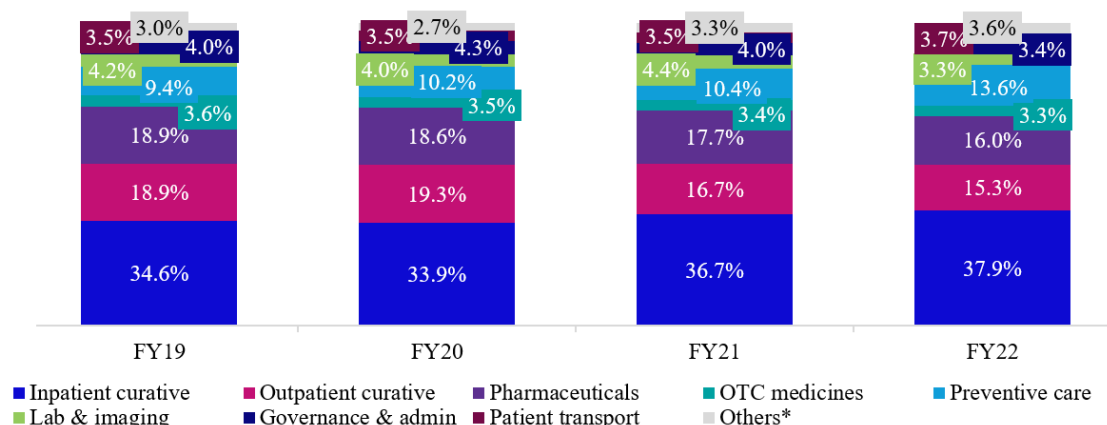
Note(s): ¹Current Healthcare Expenditure; *others include Non-Profit Institutions Serving Households, Enterprise's financing schemes, etc.
Source(s): National Health Systems Resource Centre, 1Lattice analysis

Healthcare expenditure by financing schemes refers to spending classified by the source of funds, including households, government, and insurance providers. In India, spending grew from INR 5.4T in FY19 to INR 7.9T in FY22, with out-of-pocket share falling from 53.2% to 45.1%. State and Union Government spending accounted for approximately 32.5% of total healthcare expenditure, while the share of insurance-funded expenditure increased to approximately 14.7%, reflecting a gradual shift towards greater risk pooling and public funding.. This transition is improving affordability, widening access, and fuelling demand for hospitals, devices, and advanced treatments.



2.4 Inpatient curative care share of healthcare expenditure in India increased from 34.6% in FY19 to 37.9% in FY22, while preventive care grew from 9.4% to 13.6%, reflecting a shift toward hospital treatment and health promotion

Healthcare expenditure by functions (% of CHE¹) – India
(%, FY19-22)

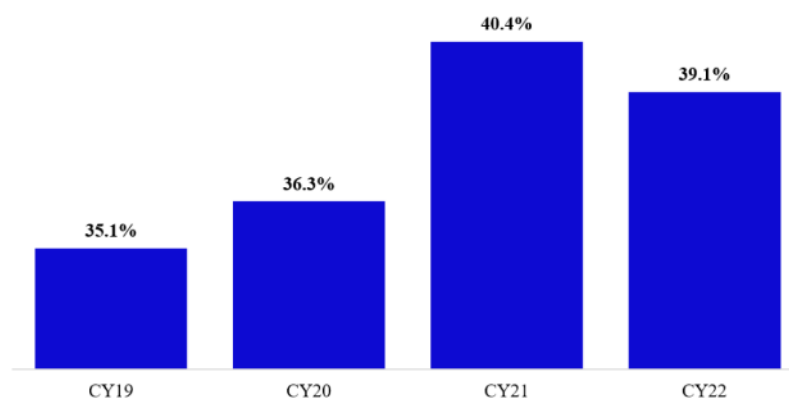


Note(s): ¹Current Healthcare Expenditure; *others include rehabilitative care, long-term care, home based curative care, etc.
Source(s): National Health Systems Resource Centre, 1Lattice analysis

Healthcare expenditure by functions reflects spending across categories such as inpatient and outpatient curative, pharmaceuticals, over the counter (OTC) medicines, preventive care, lab & imaging, governance & admin, patient transport, and long-term care. From FY19 to FY22, spending patterns show a clear shift with inpatient curative care growing from 34.6% to 37.9%, reflecting growing demand for hospital-based treatment, while outpatient care and pharmaceuticals declined to 15.3% and 16.0%, respectively. Preventive care saw a notable increase from 9.4% to 13.6%, highlighting a stronger focus on health promotion. Expenditure on diagnostics, governance, patient transport, and other services remained stable.

2.5 Government healthcare expenditure in India rose from 35.1% in CY19 to 40.4% in CY21, and stood at 39.1% in CY22, showing a stronger role of public funding in healthcare

Government healthcare expenditure % of CHE¹ – India
(%, CY19-22)



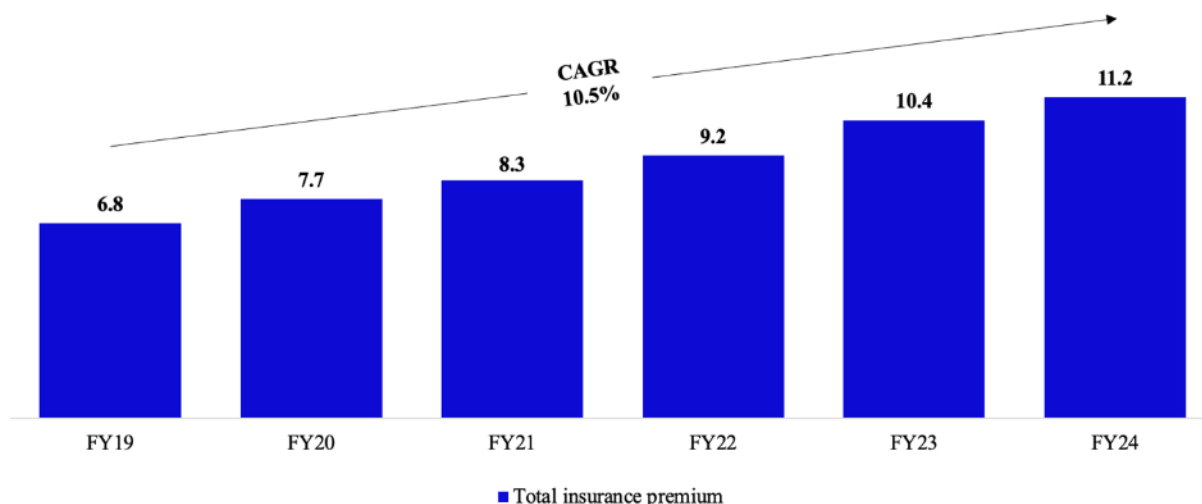
Note(s): ¹Current Healthcare Expenditure
Source(s): WHO-Global Health Expenditure Database, 1Lattice analysis

Government healthcare expenditure, covering public hospitals, primary health centres, vaccination programs, and schemes like Ayushman Bharat, rose from 35.1% of healthcare expenditure in CY19 to 40.4% in CY21, before moderating to 39.1% in CY22. Higher public spending is improving access to hospital services and insurance coverage, driving demand for essential medical devices such as surgical implants, wound care products, and critical care equipment across public health facilities.



2.6 India's insurance premiums reached INR 11.2L Cr in FY24, growing at a CAGR of 10.5% over FY19-24, reflecting growing financial access and healthcare coverage

Total insurance premium collection in India
(INR L Cr, FY19-24)



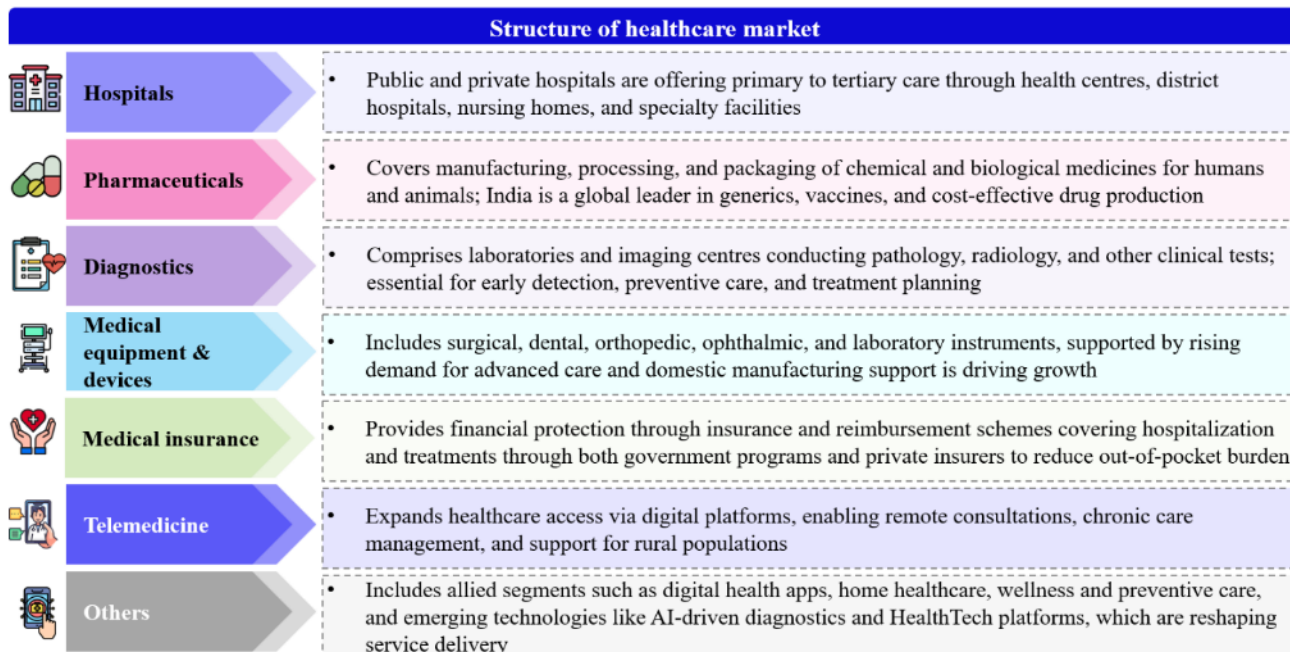
Source(s): IRDAI, 1Lattice analysis

India's insurance premium collections have grown from INR 6.8L Cr in FY19 to INR 11.2L Cr in FY24, with a CAGR of 10.5%. This steady rise in premiums is enabling hospitals to access greater funding and accelerate infrastructure modernisation. As insurance penetration increases, hospitals benefit from reliable reimbursements, leading to investments in technology, broader treatment options, and easier access for patients.

3. Global and Indian healthcare market overview

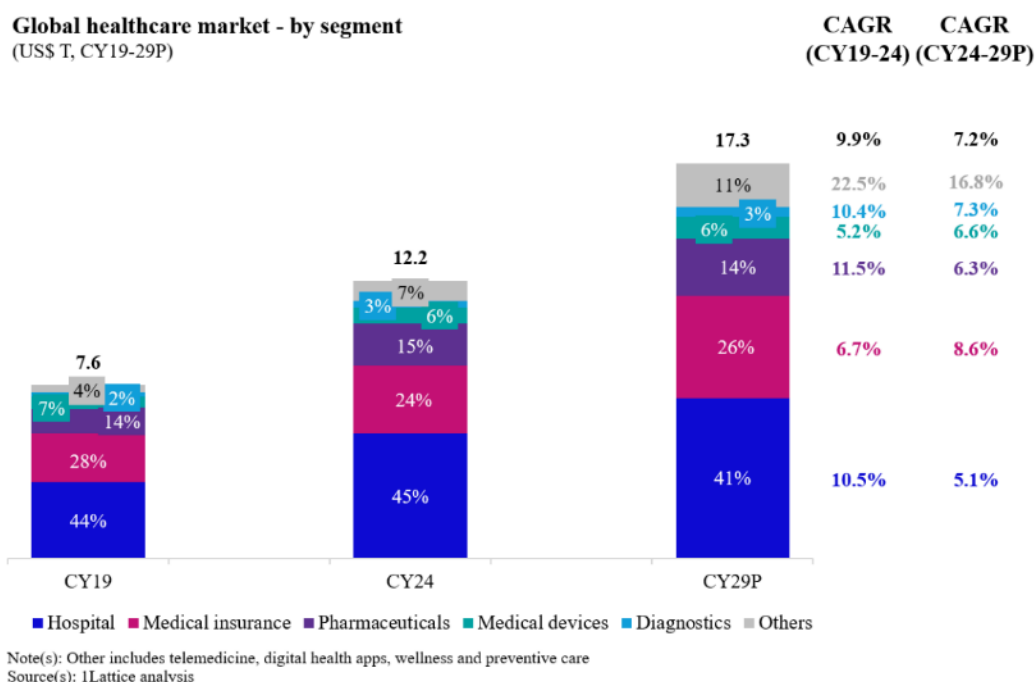
3.1 The structure of the global healthcare system is defined by hospitals, medicines, diagnostics, medical devices, and insurance, supported by emerging health tech solutions

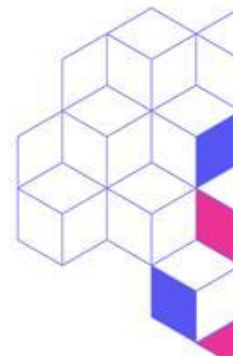
The healthcare industry is built around hospitals, medicines, diagnostics, medical devices, and insurance. In India, strong government initiatives and a rapidly expanding private sector are accelerating healthcare growth. While hospitals and medicines form the backbone of care, diagnostics, medical devices, and insurance are enhancing access and affordability. At the same time, emerging technologies such as telemedicine and digital health are reshaping delivery models, making healthcare more convenient, efficient, and accessible.



3.2 Global healthcare market valued at US\$ 12.2T in CY24 and is projected to reach US\$ 17.3T by CY29P, driven by rising hospital demand, growth in pharmaceuticals and medical devices

The global healthcare market has grown from US\$ 12.2T in CY24 and expected to be US\$ 17.3T by CY29P, at a CAGR of 7.2% from CY24-29P, supported by the rising burden of chronic diseases, an ageing population, increasing healthcare expenditure, and greater adoption of advanced medical technologies. Overall, healthcare market growth is supported by the expansion of hospital infrastructure, rising demand for medical services, a robust pharmaceutical sector, shift towards preventive care, growing health insurance penetration, and the ongoing transformation of care delivery through technology-enabled solutions. Hospitals will continue to be the largest segment, expected to account for more than 40% of the market and growing at 5.1% CAGR during CY24-29P, driven by capacity expansion, rising surgical volumes, and improved access in emerging regions.



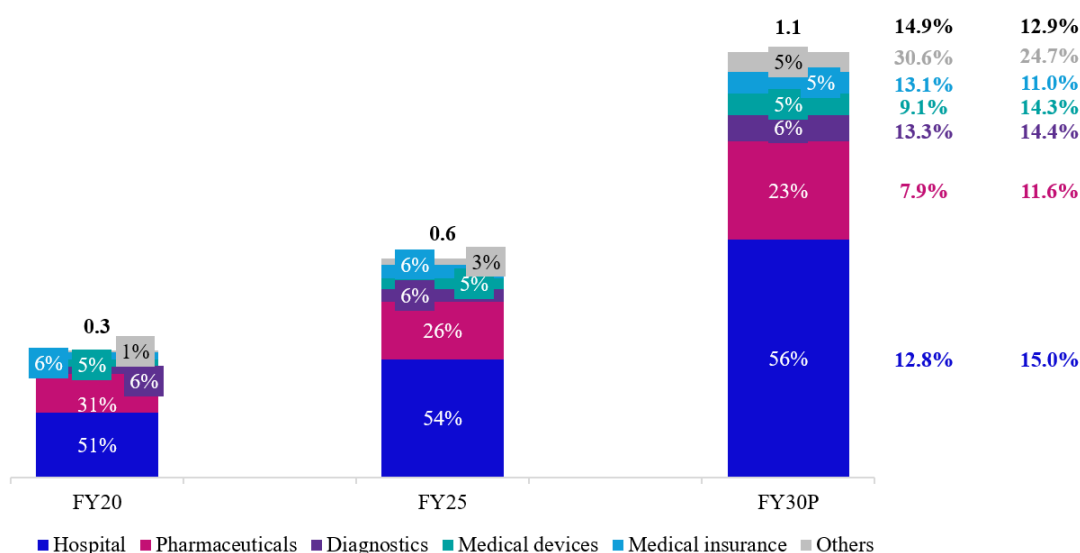


3.3 Indian healthcare market valued at US\$ 0.6T in FY25 and is projected to grow US\$ 1.1T by FY30P, led by rising hospital demand, growth in pharmaceuticals, and increasing demand for medical services

India's healthcare market is projected to increase from US\$ 0.6T in FY25 and expected to be US\$ 1.1T by FY30P, at a CAGR of 12.9% during FY25-30P, supported by rising healthcare demand, broader insurance coverage, and adoption of advanced medical technologies. Overall, healthcare market growth is supported by trends in hospital infrastructure expansion, increase in government spending, growing demand for medical services, expansion in pharmaceuticals sector, rising insurance penetration, and technology-enabled healthcare. Hospitals remain the dominant segment, expected to reach 56% of the market by FY30P and grow at 15.0% CAGR during FY25-30P, driven by capacity expansion and higher surgical procedures. Medical devices including surgical implants are also set to expand strongly at 14.3% CAGR during FY25-30P.

Indian healthcare market - by segment
(US\$ T, FY20-30P)

CAGR (FY20-25) CAGR (FY25-30P)



Note(s): Other includes telemedicine, digital health apps, wellness and preventive care
Source(s): 1Lattice analysis

3.4 Growth drivers of India's healthcare market: Expansion in healthcare infrastructure, government initiatives, growing demand for medical services and expanding pharmaceuticals sector are fuelling healthcare market

India's healthcare sector is witnessing strong growth, supported by hospital expansion beyond metros, rising insurance penetration, and sustained demand for advanced care, reinforced by government support and technology adoption.

- **Expansion of hospital infrastructure:** Hospitals are increasingly expanding into tier 2/3 cities, improving access to quality healthcare for a wider population. Rising local incomes, untapped demand, and affordable pricing are driving this growth beyond major metros.
- **Government initiatives and spending:** Initiatives such as the National Health Policy, Ayushman Bharat Digital Mission, and PLI schemes, along with ~US\$ 200B investment in medical infrastructure, are strengthening healthcare facilities, boosting domestic manufacturing, and driving innovation.
- **Growing demand for medical services:** Increasing prevalence of non-communicable diseases, accidents, age-related conditions and rising chronic diseases are leading to higher demand for surgeries, specialty treatments, medical implants and devices.
- **Expanding pharmaceuticals sector:** India's strong position in generics, coupled with growing demand for specialty and chronic therapies, is driving consistent growth in the pharmaceutical sector, reinforcing its role as a key pillar of the healthcare ecosystem
- **Rising penetration of health insurance:** Health insurance coverage is improving access to private and corporate healthcare, reducing out-of-pocket costs, and enhancing affordability. Policies issued grew from 14.6Cr to 36.5Cr and premiums from INR 3.94L Cr to INR 11.2L Cr between FY14-24, with penetration at ~3.8%, leaving significant room for growth.



- **Technology-enabled healthcare transformation:** Digital health platforms, telemedicine, AI, and data-driven solutions are reshaping healthcare delivery, improving operational efficiency, and extending services to underserved regions, enabling more inclusive and patient-centric care

3.5 Key trends of India's healthcare market: Surge in healthcare infrastructure expanding global footprints, shift towards preventive care and technology driven healthcare solutions are fuelling India's healthcare market

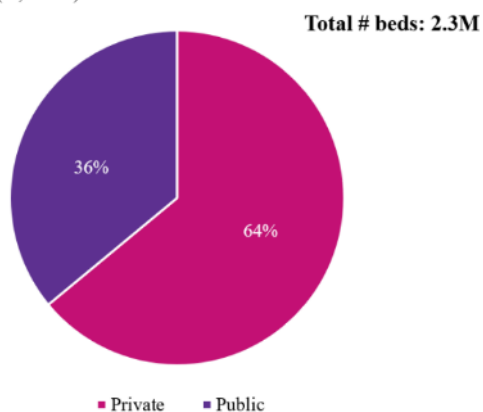
The Indian healthcare industry is marked by significant advancements in infrastructure, technology, and access. Key trends include public-private partnerships expanding facilities, global expansion of pharmaceutical and MedTech sectors, adoption of tech-led health platforms, preventive care initiatives, and rapid telemedicine uptake, collectively enhancing healthcare delivery and accessibility nationwide.

Key trends of India's healthcare market	
Surge in healthcare infrastructure	
- Public-private partnerships and rapid expansion of hospitals, medical colleges, and health centers are strengthening capacity and access nationwide - Initiatives such as Ayushman Arogya Mandirs and AIIMS expansion are boosting both primary and specialized care delivery	
Expanding global footprint	
- India is emerging as a global MedTech and pharmaceutical hub, leveraging cost efficiency, quality manufacturing, and regulatory certifications - With strong export momentum in generic medicine and devices, India is reinforcing its position as a critical link in global healthcare supply chains	
Shift towards preventive care	
- Rising health awareness and lifestyle-related risks are shifting focus from treatment to early detection and wellness - Government-led community health programs are scaling preventive services, particularly for vulnerable and underserved populations	
Tech-driven healthcare solutions	
- AI-powered diagnostics and digital platforms are enhancing accuracy, enabling personalised care, and improving treatment outcomes - Initiatives such as the Ayushman Bharat Digital Mission, and CoWIN are creating a unified, tech-enabled healthcare ecosystem	
Telemedicine	
- Platforms such as eSanjeevani are accelerating adoption of online consultations, making specialist care accessible across metro & tier 2/3 cities - Hybrid care models, supported by improved digital infrastructure, are reducing costs while expanding access to chronic and long-term care	

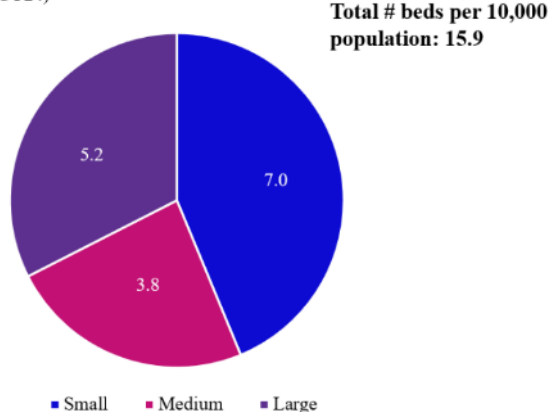
3.6 Healthcare delivery in India is advancing with growing bed capacity and medical workforce

3.6.1. India had 2.3M hospital beds in CY24, with 64% in the private sector and overall bed density of 15.9 per 10,000 population, highlighting their pivotal role in strengthening healthcare delivery

hospital beds by private and public sector
(%, CY24)



beds per 10,000 population – by hospital type
(#, CY24)



Source(s): WHO, 1Lattice analysis

India's hospital bed base stood at 2.3M in CY24, with the private sector contributing 64% and small hospitals accounting for the largest share at ~7 beds per 10,000 population. This highlights the growing role of private providers and smaller facilities in meeting rising healthcare needs such as access to inpatient care, diagnostics, and emergency support across the country. As

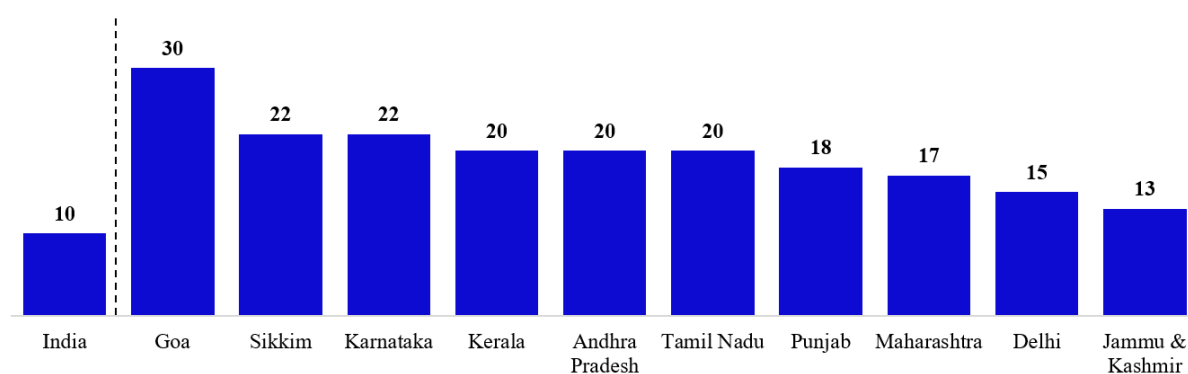


these facilities expand, they are also driving an increase in surgical procedures, wider adoption of implants, and stronger demand for medical consumables and advanced treatment solutions.

3.6.2. In FY24, India had 10 doctors per 10,000 population, with Goa and Sikkim leading at 30 and 22 doctors per 10,000 respectively

Overall, India had 10 doctors for every 10,000 population. Goa leads at 30, followed by Sikkim, and Karnataka 22 each. Among the larger states, Maharashtra had 17, Delhi had 15, and Jammu & Kashmir had 13.

Top 10 Indian states by doctors per 10,000 population
(#, FY24)



Source(s): National Health Profile, 1Lattice analysis

4. Global and Indian medical devices market

4.1. Definitions and segmentation of medical devices market

Medical devices are integral components of modern healthcare, encompassing a wide range of instruments and technologies that aid in the prevention, diagnosis, treatment, and management of diseases and health conditions. According to the World Health Organization (WHO), a medical device is “an article, instrument, apparatus, or machine used in the prevention, diagnosis, or treatment of illness or disease, or for detecting, measuring, restoring, correcting, or modifying the structure or function of the body for a health-related purpose,” with its primary action not achieved through pharmacological, immunological, or metabolic means.

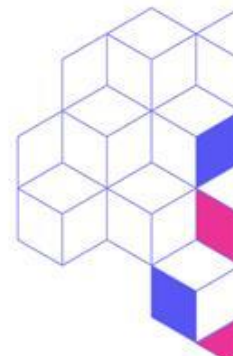
The medical devices industry spans a diverse spectrum of products that support nearly every aspect of patient care, from routine monitoring to complex surgical interventions. This includes consumables and disposables such as syringes, catheters, and wound dressings; diagnostic tools like in-vitro diagnostic (IVD) reagents and imaging systems; surgical instruments, hospital equipment; and high-precision implants including stents, shunts, and prosthetic devices. Collectively, these devices play a critical role in improving clinical outcomes, enhancing healthcare efficiency, and driving continuous innovation in medical practice.

4.1.1. Segmentation of medical devices by functionality

Medical devices can be segmented based on their functionality, which determines their technical complexity, maintenance, training needs and usage frequency.



Segmentation based on functionality			
S. No.	Product name	Product description	Product photo
1	Medical equipment	Devices, instruments, apparatus, or machines are utilized for various purposes such as the diagnosis, treatment, monitoring, or prevention of illnesses or injuries. These include diagnostic imaging devices such as X-ray, CT, and MRI machines; therapeutic equipment like infusion pumps, electrocardiographs, dialysis machines, patient monitoring systems; and handheld or homecare products such as glucose meters and pulse oximeters.	
2	Surgical implants	Devices or tissues placed inside or on the surface of the body temporarily or permanently, typically through surgical or medical intervention. Implants can serve a variety of purposes, such as replacing missing or damaged biological structures, supporting or enhancing existing tissues or organs, delivering medications, or monitoring physiological functions. Some examples of implants are shunts, hydroxy apatite (bone cement), ceramic ball, prostheses, etc.	
3	Surgical disposables	Single-use consumable medical products, including drapes, gowns, equipment covers, procedure packs, dressings, suction and irrigation sets, and single-use vascular or endoscopic accessories. These products help maintain a sterile field, protect patients and staff, and manage fluids and devices during procedures. Some examples include PCNL drape, IV dressing, viral barrier kits, c arm cover etc.	
4	Surgical instruments	Specialised tools used to perform, assist, or facilitate surgical procedures, ensuring precision, safety, and effective treatment. Major examples include scalpels for incisions, scissors for cutting tissues or sutures, forceps for grasping or holding tissues, needle holders for suturing, clamps and haemostats for controlling bleeding, sutures and suture materials for wound closure. These instruments are essential across all types of surgeries, from simple procedures to complex operations, providing critical support for both diagnosis and treatment	
5	Other functional medical devices	Primarily include IVD reagents and kits and patient mobility aids such as crutches, walkers, and wheelchairs, which together form the major portion of this category. IVD reagents are laboratory consumables used for detecting diseases, monitoring biomarkers, and guiding clinical decisions through the analysis of blood, urine, and other biological samples, while mobility aids support patient rehabilitation and daily functioning. The remaining devices include hospital beds and general facility items that ensure the smooth day-to-day operation of healthcare facilities, supporting both patient care and operational efficiency in hospitals	



4.1.2. Segmentation of medical devices by application

Medical devices can be segmented based on their clinical application, which determines their technology intensity, pricing, and usage across specialities.

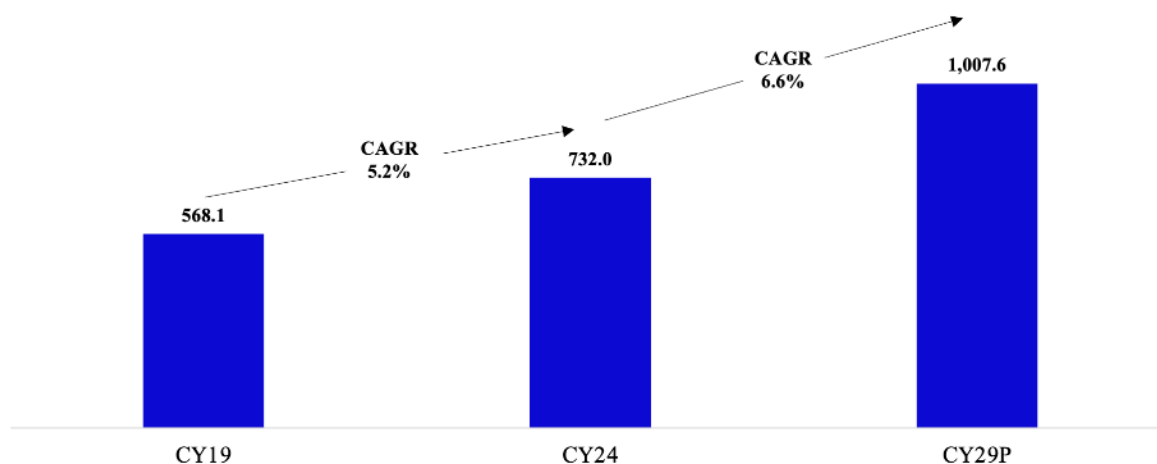
Segmentation based on application			
S. No.	Product name	Product description	Product photo
1	Orthopaedic medical devices	Includes joint-reconstruction implants (hip, knee, shoulder, ankle) for degenerative conditions; spinal implants (rods, plates, screws, cages) for stabilisation and fusion; trauma fixation implants (plates, intramedullary nails, pins and wires) for fracture fixation and bone healing; orthopaedic bone-graft substitutes (synthetic hydroxyapatite, tricalcium phosphate, bone cements) for grafting and void filling; and diagnostic/imaging devices such as X-ray and radiography systems, intraoperative fluoroscopy/C-arm, CT, MRI and DEXA/bone-densitometry and arthroscopy systems for visualisation and pre-/post-operative assessment	
2	Neuro medical devices	Comprise EEG and MRI/CT/PET neuroimaging systems for diagnosis/monitoring, deep brain stimulation (DBS), vagus nerve stimulation (VNS) and responsive neurostimulation (RNS) for neuromodulation, external ventricular drains and CSF shunts for intracranial pressure and CSF management, thrombectomy devices and embolization coils for endovascular intervention, and neuroprosthetics and neuromuscular stimulators for rehabilitation	
3	Ophthalmic medical devices	Includes diagnostic, monitoring, therapeutic and implantable tools, and include "slit lamps, ophthalmoscopes and phoropters for eye examination; tonometers and visual-field analysers for glaucoma screening/monitoring; OCT and fundus cameras and A/B-scan ultrasound for retinal and structural imaging; phacoemulsification systems and operating microscopes for cataract surgery; ophthalmic lasers (e.g., YAG/SLT) for therapeutic procedures; intraocular lenses (IOLs) for cataract replacement and glaucoma implants/MIGS and drainage shunts to lower intraocular pressure	
4	Cardiovascular medical devices	Includes ECG and echocardiography systems for diagnosis/monitoring, pacemakers and implantable cardioverter-defibrillators for rhythm management, coronary stents and angioplasty balloons interventional, prosthetic heart valves for structural repair, and external defibrillators and ventricular assist devices for emergency and therapeutic	
5	Critical care and surgical support system	Constitutes hospital-grade devices that support critical care, imaging and operative delivery: mechanical ventilators, oxygen concentrators and CPAP/BiPAP systems, haemodialysis machines and consumables, extracorporeal membrane oxygenation systems, infusion and syringe pumps, anaesthesia machines and sterilisation/sterile-processing equipment, and endoscopy and laparoscopic platforms together with intraoperative imaging and surgical navigation like C-arm and O-arm systems, robotic surgical platforms for minimally invasive procedures like the da Vinci system; patient monitors and neonatal incubators; point-of-care and laboratory analysers like glucometers, blood-gas analysers, haematology analysers, negative-pressure wound therapy, and standard surgical consumables like sutures, staples and drapes	
6	Dental medical devices	Includes diagnostic, restorative, surgical and prosthetic tools, including dental implants (titanium endosseous and subperiosteal artificial tooth roots) for tooth replacement and prosthetic support; dental handpieces and instruments (drills, forceps, scalers, endodontic files) for operative and surgical procedures; intraoral and extraoral imaging (intraoral X-rays, panoramic/CBCT, intraoral cameras) and CAD/CAM scanners for diagnosis and treatment planning; restorative and prosthetic materials (amalgam, composite resins, crowns, bridges, dentures) and implant abutments; orthodontic appliances and brackets; ultrasonic scalers and prophylaxis equipment; and dental treatment units and sterilisation/auxiliary equipment	



4.2. The global medical devices market was valued at US\$ 732.0B (INR 61.9T) in CY24 and is expected to reach US\$ 1,007.6B (INR 85.2T) in CY29P, growing with a CAGR of 6.6% from CY24 to CY29P.

The global medical devices and equipment industry is witnessing steady growth, supported by increasing healthcare spending, technological innovation, and rising demand for quality healthcare infrastructure. The market was valued at US\$ 568.1B (INR 40.0T) in CY19 and is projected to grow at a CAGR of 5.2% during CY19-24, driven by increasing demand for advanced surgical and therapeutic solutions across both developed and emerging markets due to rising prevalence of chronic and lifestyle-related diseases, an ageing population, rapid technological advancements, growing demand for home healthcare services, increased healthcare expenditure and expanding insurance coverage. The need for affordable and high-precision medical devices is expanding across both developed and emerging markets, driven by a growing elderly population, a higher incidence of chronic diseases, and greater access to healthcare services. Consequently, the global medical devices market is expected to register a CAGR of 6.6% from 2024 to 2029, reaching approximately US\$ 1,007.6B by 2030. Overall, the market's expansion reflects healthcare systems' growing reliance on innovative medical technologies to enhance patient care, improve treatment outcomes, and streamline clinical processes, creating a strong foundation for continued adoption worldwide.

Global medical devices market
(US\$ B, CY19-29P)

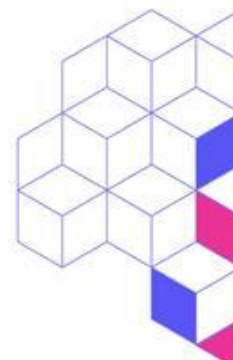


Source(s): 1Lattice analysis

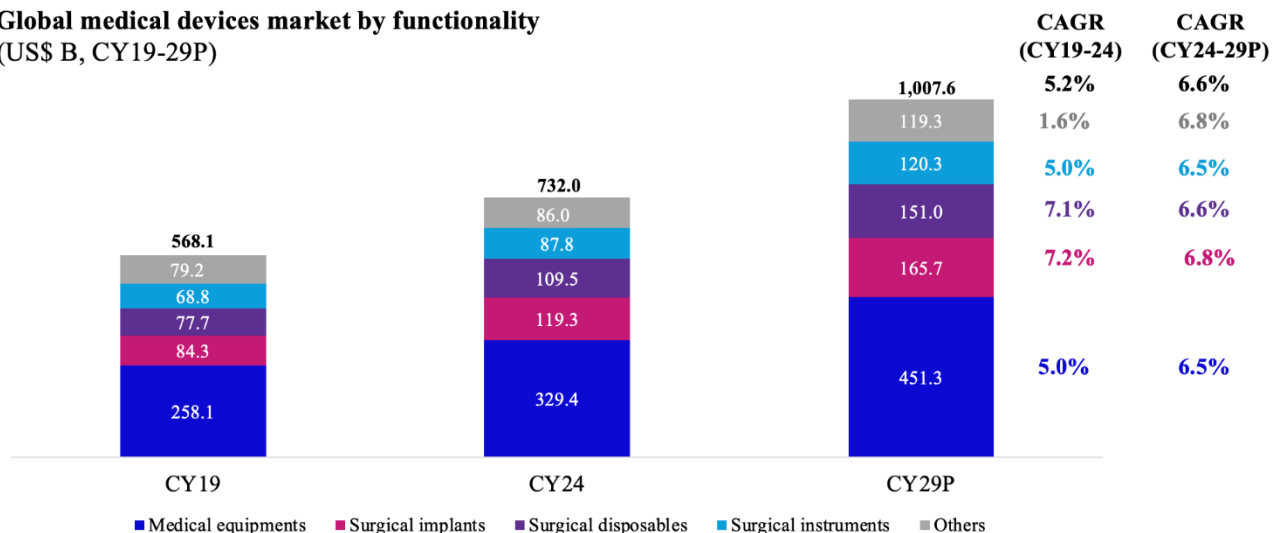
4.2.1. Global medical device market by functionality is dominated by medical equipment, valued at US\$ 329.4B (INR 27.9T) in CY24 and is projected to reach US\$ 451.3 B (INR 38.2T) by CY29P, growing at a CAGR of 6.5%.

Medical devices can be segmented by functionality across medical equipment, surgical disposables, surgical implants, surgical instruments, and others, including IVD reagents and patient aids.

- 1) Medical equipment** segment is growing with market size of US\$ 329.4B (INR 27.9T) in CY24 expected to reach US\$ 451.3B (INR 38.2T) by CY29P, growing at 6.5% CAGR from CY24-29P.
- 2) Surgical implants market** was valued at US\$ 119.3B (INR 10.1T) in CY24 and is expected to reach US\$ 165.7B (INR 14.0T) in CY29P, growing with a CAGR of 6.8% from CY24-29P. Growing healthcare access and awareness are backed by ageing populations, rising trauma and chronic disease burden, and increasing demand for both therapeutic and elective surgical interventions across orthopaedics and neurology segments
- 3) Surgical disposables market** was valued at US\$ 109.5B (INR 9.3T) in CY24 and is projected to reach US\$ 151.0B (INR 12.8T) in CY29P, growing at a CAGR of 6.6% from CY24-29P. The rising surgical procedure volumes, increased awareness of hospital-acquired infections, and stringent infection control protocols worldwide, have fuelled growth.
- 4) Surgical instruments** market is projected to grow from US\$ 87.8B (INR 7.4T) in CY24 to US\$ 120.3B (INR 10.2T) in FY29P, at a CAGR of 6.5% from CY24-29P.
- 5) Other functional medical devices** majorly including the IVD reagents and patient aids like crutches etc, was valued at US\$ 86.0B (INR 7.3T) in CY24, projected to reach US\$ 119.2B (INR 10.1T) in CY29P at a CAGR of 6.8% from CY24-29P.



Global medical devices market by functionality
(US\$ B, CY19-29P)

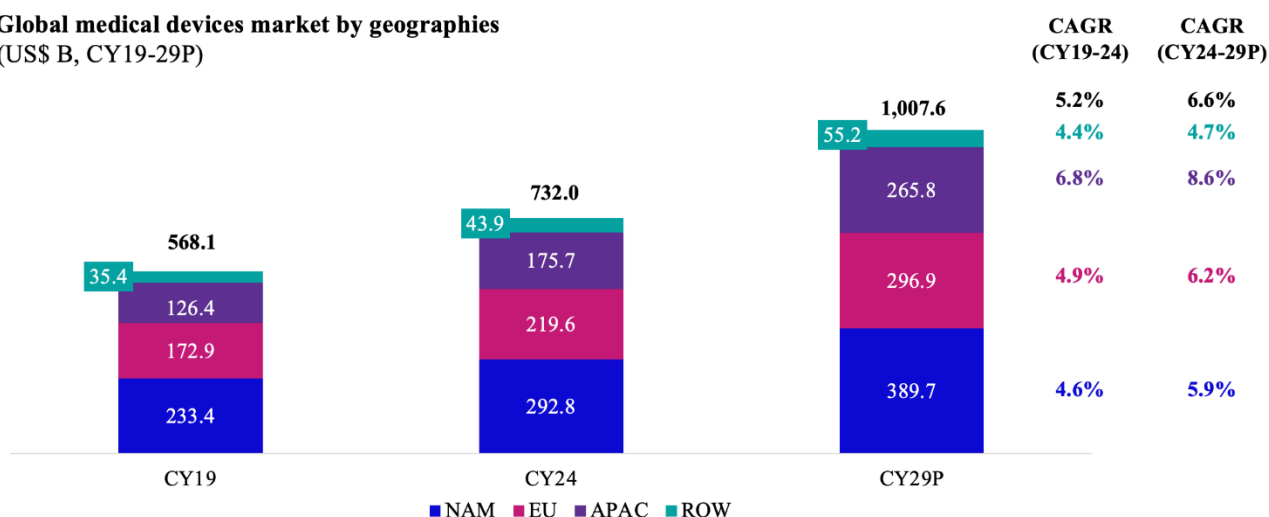


Source(s): 1Lattice analysis

4.2.2. North America (NAM) accounts for 40.0% of the total medical devices market, followed by Europe (EU) with 30.0% share and Asia-Pacific (APAC) with 24.0% market share.

In CY24 North America led the global medical devices market, commanding a substantial 40.0% share, closely followed by Europe at 30.0% and Asia Pacific at 24.0%. North America’s medical devices market is driven by advanced reimbursement systems, integrated research campuses and easy access to regulatory authorities. Strong venture funding and support from clinicians help launch pioneering products quickly, encouraging early adoption of robotics, AI imaging, and leadless cardiac devices. Meanwhile, the Asia Pacific region including technologically advanced countries like China and Japan, is expanding rapidly at 8.6% CAGR and is expected to reach a market size of US\$ 265.8B (INR 22.5T) by CY29P, driven by domestic innovation incentives and digital hospital pilot programs. Rest of the World (ROW) was valued at US\$ 43.9B (INR 3.7T) in CY24 and is expected to reach US\$ 55.2B (INR 4.7T) in CY29P growing at a CAGR of 4.7%.

Global medical devices market by geographies
(US\$ B, CY19-29P)



Source(s): 1Lattice analysis

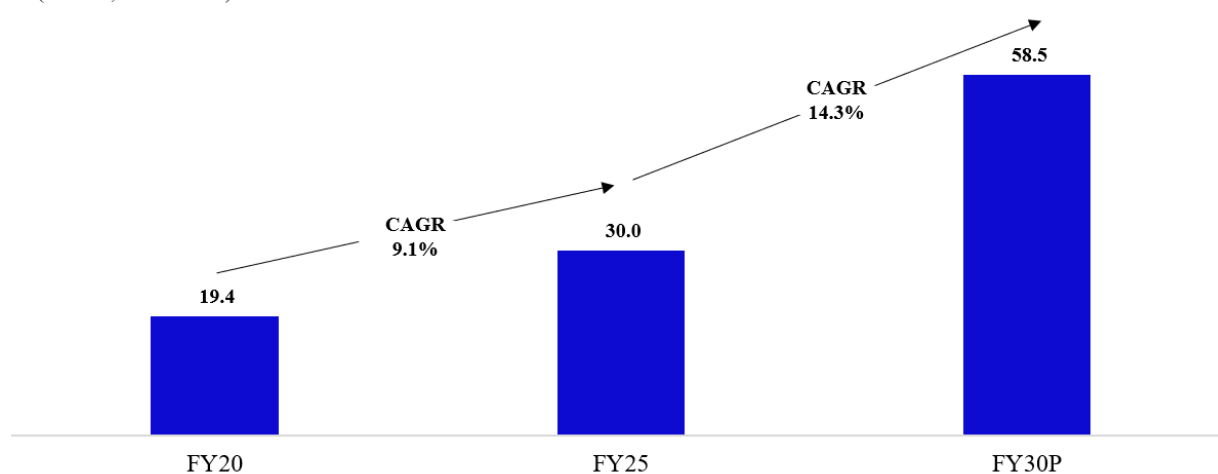
4.3. The Indian medical devices market was valued at US\$ 30.0 B (INR 2.5T) in FY25 and is expected to reach US\$ 58.5 B (INR 4.9 T) in FY30P, growing with a CAGR of 14.3% from FY25-30P.

In India, the medical devices sector is experiencing sustained growth, driven by the expansion of hospital infrastructure, increased public and private healthcare expenditure, and greater awareness of preventive care and early diagnosis. The industry’s growth is further supported by import substitution trends and a growing focus on domestic manufacturing under the “Make in India” initiative. The Government of India has also undertaken several policy measures to encourage local



manufacturing and research in the medical devices sector, including the PLI scheme for medical devices and the Ayushman Bharat Health Infrastructure Mission. These initiatives, coupled with rising domestic demand and strong export potential, are expected to create significant opportunities for companies engaged in the manufacture of medical devices and equipment. Building on this momentum, India's medical devices market is expanding rapidly due to strong government support and better manufacturing capacity. Allowing 100.0% foreign ownership and the PLI (Production Linked Incentive) programme has attracted investment and offers financial help for local production. Government-backed device parks provide ready-to-use factory space, cutting setup costs. Many companies are moving manufacturing from China to India, and rising medical tourism is increasing demand from overseas patients.

Indian medical devices market
(US\$ B, FY20-30P)



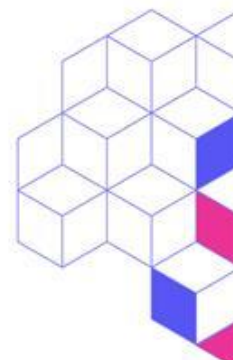
Source(s): 1Lattice analysis

The Centre's broader industrial push and schemes promoting medical-device parks and cluster development have accelerated localisation, helped contain costs, and attracted both multinational partnerships and domestic scale-ups, strengthening India's competitiveness as both a manufacturing hub and export base.

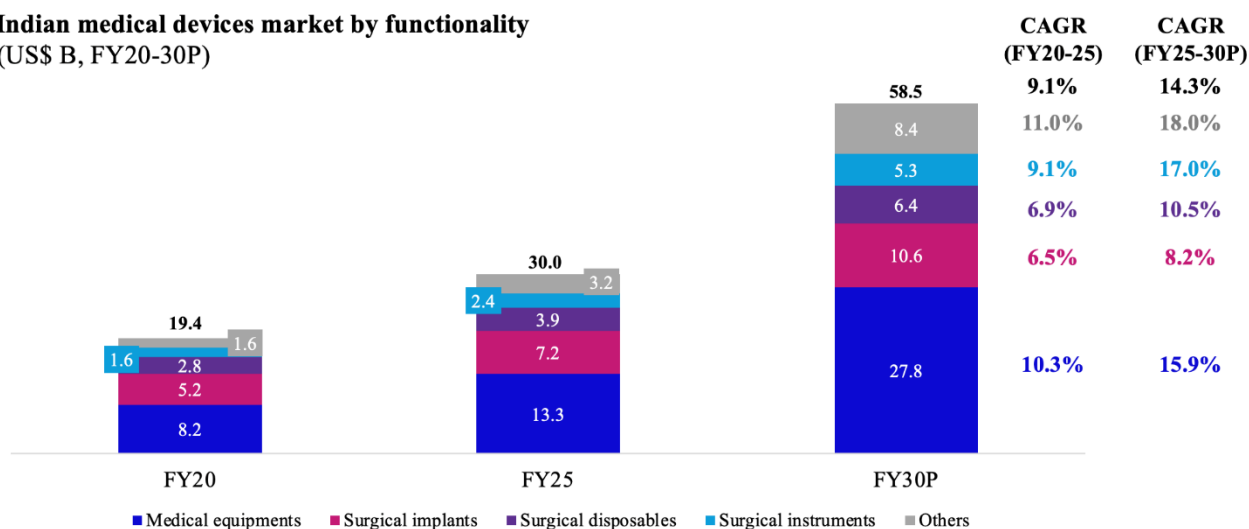
Taken together, the large patient pool, improving hospital infrastructure, focused government support for manufacturing and procurement reforms mean India is fast becoming one of Asia's most attractive medical-device markets offering growth opportunities across diagnostics, consumables, capital equipment, and device manufacturing services.

4.3.1. Indian medical device market by functionality is dominated by medical equipment, valued at US\$ 13.3B (INR 1.1T) in FY25 and is projected to reach US\$ 27.8 B (INR 2.4T) by FY30P, growing at a CAGR of 15.9%.

Medical devices can be segmented by functionality across medical equipment, surgical disposables, surgical implants, surgical instruments, and others, including IVD reagents and patient aids. Medical equipment leads India's medical device market with 44.3% market share in FY25.



Indian medical devices market by functionality (US\$ B, FY20-30P)

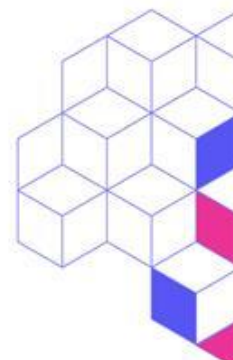


Source(s): 1Lattice analysis

- Medical equipment** segment is gaining momentum with market size of US\$ 13.3B (INR 1.1T) in FY25, expected to reach US\$ 27.8B (INR 2.4T) by FY30P, growing at a CAGR of 15.9% from FY25-30P, driven by rising healthcare infrastructure investments, increasing hospital establishments, and adoption of advanced diagnostic and treatment technologies.
- Surgical implants** market was valued at US\$ 7.2B (INR 608.8B) in FY25 and is expected to reach US\$ 10.6B (INR 896.3B) in FY30P, growing with a CAGR of 8.2% from FY25-30P, fuelled by an ageing population, rising demand for minimally invasive treatments, government “Make in India” initiatives, expanding healthcare infrastructure, and broader insurance coverage enhancing access. It spans orthopaedic, cardiovascular, dental, neurological, and cosmetic applications.
- Surgical disposables** market was valued at US\$ 3.9B (INR 329.8B) in FY25 and is expected to expand to US\$ 6.4B (INR 541.2B) by FY30P, reflecting a CAGR of 10.5%, supported by increasing surgical volumes, rising focus on infection control, and preference for single-use products across hospitals and clinics.
- Surgical instruments** market is projected to grow from US\$ 2.4B (INR 202.9B) in FY25 to US\$ 5.3B (INR 448.2B) in FY30P, at a CAGR of 17.0% from FY25-30P, driven by rising minimally invasive surgical procedures, growing number of surgical interventions due to an ageing population, and adoption of advanced technologies including robotic-assisted surgical systems.
- Other** functional medical devices, majorly including IVD reagents and patient aids like crutches, was valued at US\$ 3.2B (INR 270.6B) in FY25, projected to reach US\$ 8.4B (INR 710.3B) in FY30P at a CAGR of 18.0% from FY25-30P, propelled by increasing diagnostic testing demand, greater patient awareness, and adoption of supportive mobility and monitoring devices.

4.3.2. Growth drivers for medical devices market in India

India's medical devices market is experiencing unprecedented growth momentum driven by a convergence of favourable policy reforms, demographic transitions, and evolving healthcare needs. The sector's expansion is propelled by strategic government initiatives aimed at promoting domestic manufacturing, coupled with structural changes in disease patterns and population demographics that are fundamentally reshaping healthcare demand. The Indian surgical and medical devices market is expected to witness growth, driven by factors such as rising hospital infrastructure, expansion of healthcare access in tier 2&3 cities, government initiatives like PLI scheme, growth in medical tourism. These trends are expected to lead to increase the consumption of disposable surgical and implantable products and further strengthen demand for domestically manufactured devices. At the same time, manufacturers are required to make continuous R&D and capital investments to keep pace with innovation cycles and evolving clinical preferences. The medical devices sector is highly dependent on raw materials such as titanium, cobalt-chrome alloys, stainless steel, medical-grade polymers and hydroxyapatite, where global price volatility is common. A significant portion of industry demand for consumables and implants is driven by government and institutional tenders subject to cancellations, re-bids and stringent qualification criteria.

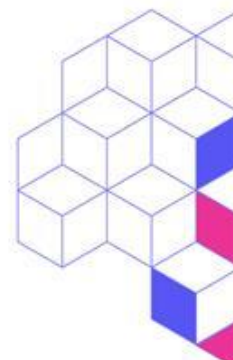


Growth drivers	Description
Make in India	Initiatives like Make in India and Atmanirbhar Bharat Abhiyaan have given a much-needed thrust by developing related infrastructure and promoting domestic manufacturing
100 percent FDI	Complete foreign ownership allowed in medical device manufacturing has boosted investor confidence. Foreign investment reached INR 33.41K Cr between 2000-2024
Medical device parks and cluster development	Government-supported industrial parks provide ready-to-use facilities that reduce setup costs and speed up production. Parks receive grants up to INR 100 Cr each
PLI scheme	PLI for Medical Devices manufacturing proposes a financial incentive to boost domestic manufacturing and attract large investment in medical devices segments
China+1 manufacturing strategy	With 20% cost advantage over China, skilled workforce, and established infrastructure, India benefits from global supply chain diversification as companies seek alternatives to China
Growth in medical tourism	India's US\$ 7B medical tourism market brings international patients seeking affordable and quality care

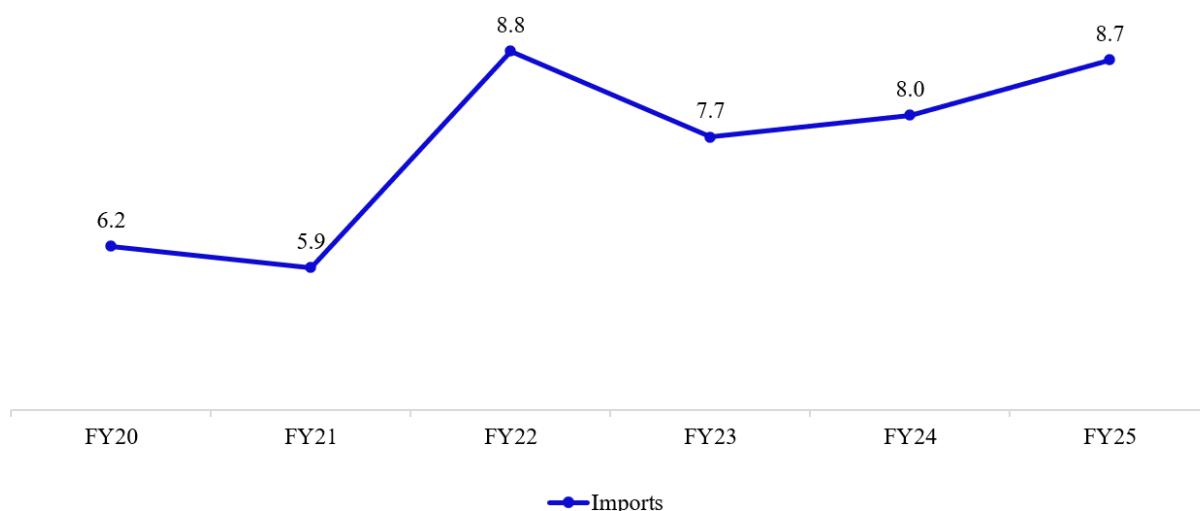
4.4 India continues to show a high dependency on imports, with nearly 70-80% of overall medical devices in use being sourced from other countries.

India's medical devices market, valued at around US\$ 30.0B (INR 2.5T) in FY25, is projected to nearly double and reach US\$ 58.5B (INR 4.9T) by FY30P. In FY25, India imported medical devices worth US\$ 8.7B (INR 735.1B), up from US\$ 6.2B (INR 453.9B) in FY20. This reflects continued dependence on imports to meet domestic demand, despite consistent export performance over the period. This clear gap between imports and exports reflects the country's limited domestic manufacturing capacity, particularly for advanced and high-end products such as diagnostic imaging systems, surgical instruments, and critical care equipment. Imports accounted for nearly 40.8% of India's domestic medical device consumption in FY25, underscoring the sector's moderate-to-high import dependency and the need to strengthen local production capabilities under initiatives like Make in India and the PLI Scheme.

Apart from imports, the growing global demand for Indian medical devices is driven by the country's expanding manufacturing capabilities, improving quality standards, and increasing alignment with international regulatory requirements. India offers a competitive cost structure, strong production capacity for high-volume consumables, and an evolving ecosystem for precision manufacturing, making it an increasingly attractive sourcing destination for international distributors and healthcare providers. International distributors increasingly choose Indian suppliers due to cost advantages, efficient production, and improved quality compliance. Making India as a dependable, good-quality sourcing alternative to the US, Europe, and China, supported by upgraded infrastructure and global certifications. International buyers value India's flexibility in specifications, packaging, and order sizes, supported by faster turnaround and responsive engagement.



India medical devices import market (US\$ B, FY20-30P)



Source(s): 1Lattice analysis

To reduce India's heavy reliance on imported medical devices and build a self-sustaining ecosystem, the Government of India has launched a series of strategic initiatives. These reforms focus on strengthening domestic manufacturing capabilities, improving regulatory clarity, and enhancing global competitiveness, paving the way for India to emerge as a leading global hub for high-quality, affordable medical devices.

Indian medical device import regulations





4.5 India's Medical Devices Rules (MDR), 2017 set a risk-based system that groups devices into four classes (A–D) across 24 categories and applies oversight proportional to patient risk.

Globally most countries follow a WHO or IMDRF risk-based, four-tier model (labels A–D or I–IV) in which Class I / A denotes lowest risk devices such as simple nonpowered instruments and gauze, Class II / B covers moderate-risk or non-invasive devices such as blood pressure monitors and spot-check oximeters, Class III / C includes higher-risk invasive or long-term implantable devices such as orthopaedic implants and intraocular lenses, and Class IV / D is the highest risk, covering life-sustaining or high-impact devices such as pacemakers and mechanical heart valves. While this four-tier approach is widely used and forms the global reference, the United States uses a three-class system (Class I, II, III) with exemptions, special controls, and product-code subdivisions that further refine regulatory requirements, and the European Union applies a rules-based MDR scheme with classes I, IIa, IIb, and III to reflect increasing risk and complexity.

India's regulatory landscape for medical devices has undergone significant reform in recent years to align with global standards, improve patient safety, and bring clarity to manufacturers and healthcare providers. The introduction of the Medical Devices Rules, 2017 marked a shift toward risk-based classification and clearer roles for central and state authorities, with ongoing revisions ensuring the framework adapts to technological advances and international best practices.

India's Medical Devices Rules (MDR) 2017 came into force on January 1, 2018, and introduced a risk-based system with four classes A, B, C, and D to ensure patient safety. Class A covers low-risk items like non-sterile drapes and simple instruments, while Class D includes high-risk devices such as heart valves and neural stimulators. Classes B and C fall in between, based on the potential harm if the device fails.

Implantable devices, which are placed inside the body are generally Class C or D. For example, most orthopaedic or ophthalmic implants are Class C, whereas life-supporting implants such as heart valves and deep-brain stimulators are Class D. Surgical dressings and drapes are Class A when they protect intact skin and Class B when used on wounds that break the dermis.

Responsibility for licensing is split between the Central and State authorities. The Central Drugs Standard Control Organisation (CDSCO) handles manufacturing and import licenses for higher-risk (Class C & D) devices, plus approvals for clinical trials. State agencies license lower-risk (Class A & B) manufacturing, as well as wholesale and retail distribution.

On 1 April 2025, CDSCO issued a draft revised risk classification list for cardiovascular and neurological devices under Rule 4(3) of MDR 2017. The review covered 553 devices, 351 cardiovascular and 202 neurological and proposed assigning 221 devices to Class D, 151 to Class C, 153 to Class B, and 25 to Class A. These changes reflect updated risk assessments and international harmonisation efforts, highlighting the need for manufacturers of neuro and cardio devices to update their technical documentation, conformity assessments, and licensing dossiers in line with the new classifications.



Class	Risk	Examples	Product photo
A/I	Low	Syringes, examination gloves, patient hoists, stethoscopes, wheelchairs, IVD instruments, microbiological culture media	
B/II	Low-moderate	Surgical gloves, infusion sets, pregnancy tests	
C/III	Moderate-high	Infusion pumps, neonatal incubators, therapeutic and diagnostic X-ray, lung ventilators, hemodialyzers, anaesthesia equipment, self-test glucose strips, IVDs for the diagnosis of Neisseria gonorrhoea	
D/IV	High	Implantable cardioverter defibrillators, pacemakers, breast implants, angioplasty balloon catheters, spinal needle, IVDs for the diagnosis of HIV, hepatitis C or hepatitis B	

4.6 Recent trends show that India's medtech sector is rapidly evolving with technology driven innovations gaining traction while government support is scaling local manufacturing to reduce import dependence.

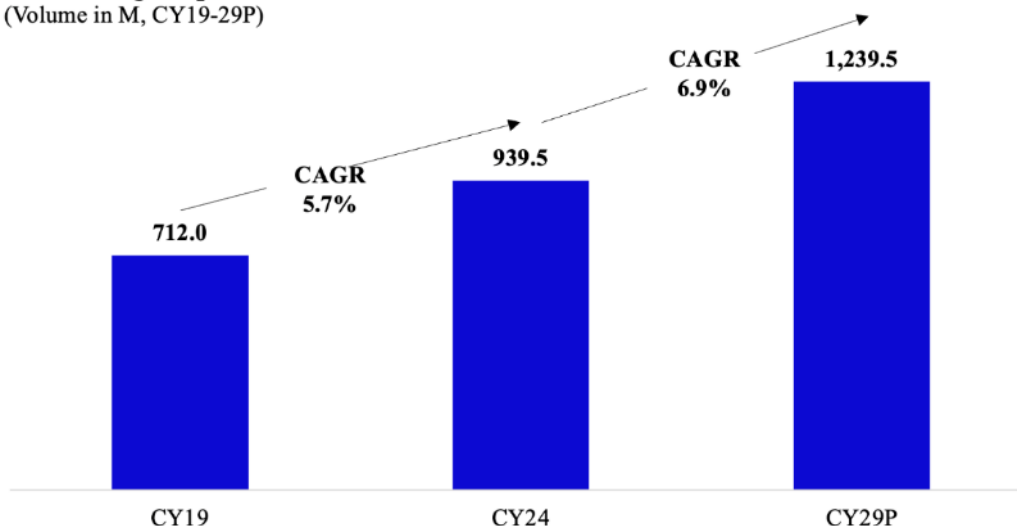
- 1) Rapid growth in demand for single-use surgical gowns:** Rising surgical volumes and stronger hospital procurement are driving quick market expansion for disposable gowns in India.
- 2) Higher-spec (AAMI level-style) gowns gaining traction:** Hospitals are buying more mid-to-high barrier gowns as infection-prevention standards and procedure complexity rise.
- 3) Faster adoption of antimicrobial and performance textiles:** Treated, fluid-repellent and breathable fabrics are increasingly specified for clinical apparel and linens.
- 4) 3D printing in surgery:** Increased utilisation of 3D printing technology to create customised surgical tools and implants. This trend can enhance the precision and effectiveness of surgical interventions.
- 5) Big Data:** Companies are using data from devices and patient vital signs to spot health patterns earlier and run predictive analytics that help clinicians make better treatment decisions and improve patient outcomes.



5. Global and Indian surgical volume market overview

5.1 Global procedure volume is expanding with cardiovascular and neurosurgery leading growth trajectory through advanced technologies.

Global surgical procedure volume
(Volume in M, CY19-29P)



Source(s): 1Lattice analysis

Global surgical procedure volumes are on a steady upward trajectory, with an estimated 939.5M procedures performed globally in CY24, supported by rising chronic disease prevalence, ageing populations, and the broader adoption of minimally invasive techniques.

Total annual procedure volumes are expected to grow, although the pace of growth differs across specialties.

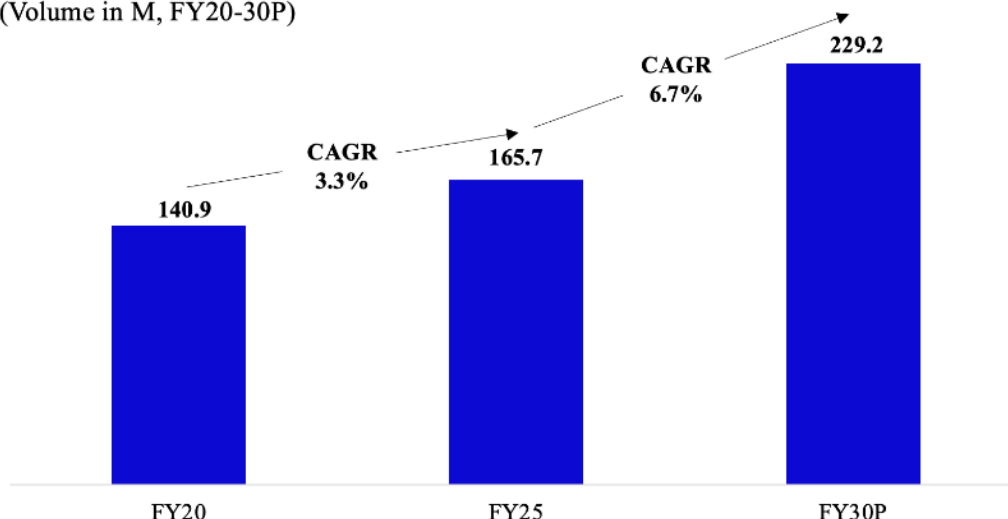
- 1) **Cardiovascular procedures** are driven by the increasing prevalence of coronary artery disease, structural heart conditions, and arrhythmias. The increasing penetration of less invasive technologies such as stenting, TAVR, and electrophysiology ablations is accelerating adoption, with Asia-Pacific region emerging as a key growth driver.
- 2) **Neurosurgical procedures**, including brain, spine, and peripheral nerve surgeries, are gaining prominence as trauma cases, neurodegenerative disorders, and tumours increase. Advances in navigation systems, robotics, and minimally invasive spine techniques are enabling safer, more precise interventions. While smaller in absolute volume compared to ophthalmology or cardiology, neurosurgery is witnessing faster adoption and growing in clinical relevance.
- 3) **Orthopaedic interventions**, especially hip and knee replacements, are expanding steadily, supported by rising life expectancy and an increasing prevalence of musculoskeletal disorders. Innovation in implants and minimally invasive surgical approaches is expanding patient eligibility and sustaining long-term growth.
- 4) **Ophthalmic surgeries** remain among the highest-volume procedures globally, led by cataract, refractive, and glaucoma interventions. Ageing populations in developed markets and improving access in emerging economies are sustaining strong demand, making ophthalmology one of the most consistently high-volume specialties globally.
- 5) **Other specialties**, including urology, oncology, and bariatrics, are gradually expanding, driven by lifestyle-related disease prevalence and the strengthening of surgical infrastructure in emerging markets.

Overall, procedure volumes are set to maintain a robust upward trajectory with approximately 939.5B procedures performed annually, growing at a CAGR of ~6.9%. Ophthalmology and cardiology procedures are expected to continue to drive absolute numbers. While neurosurgery and orthopaedics stand out as technology-led, high-growth segments, creating a favourable long-term demand environment for medtech innovators and healthcare providers across the value chain.



5.2 India's surgical ecosystem is rapidly expanding, with 165.7M procedures annually spanning high-volume and high-growth specialties.

Indian surgical procedure volume
(Volume in M, FY20-30P)



Source(s): 1Lattice analysis

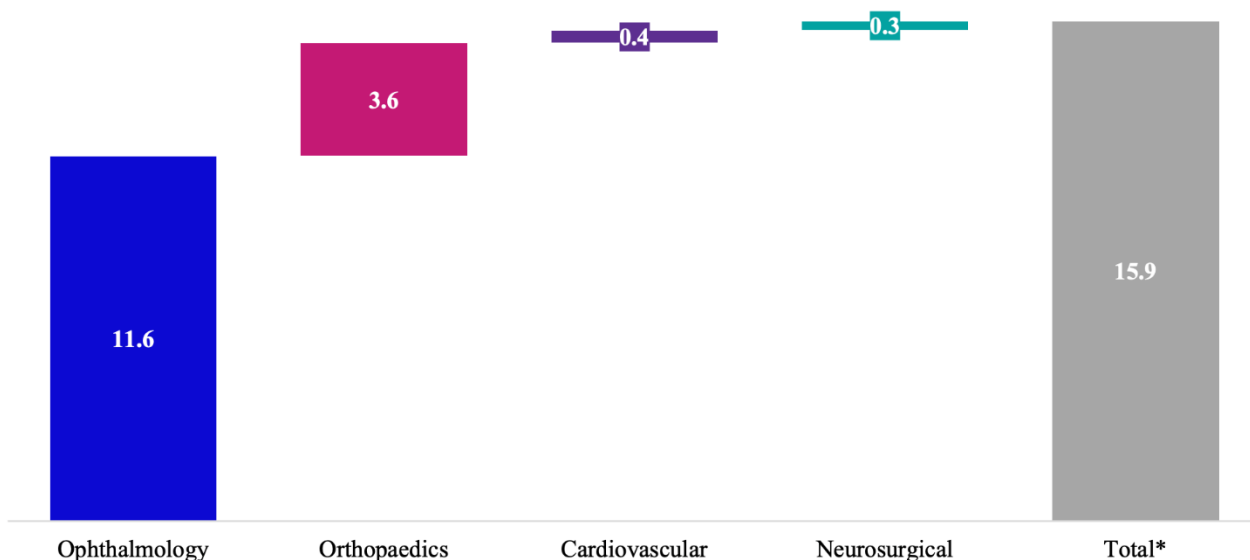
India's surgical market is entering a high-growth phase, with ~165.7M procedures performed annually in FY25 across major specialties. This growth is supported by a large and expanding population, rising prevalence of lifestyle-related and chronic diseases, increasing penetration of health insurance and government schemes, and the rapid expansion of private hospital infrastructure into tier 2/3 cities. Medical tourism, adoption of advanced technologies, and minimally invasive techniques, are further boosting procedure uptake. Collectively, these factors are laying the foundation for sustained growth across multiple surgical specialties in India. Facilities located in non-metro industrial regions often experience logistics constraints, raw material procurement delays and shortages of specialised labour. This may limit the pace at which manufacturers and providers can scale to meet the rising demand.

- 1) **Cardiovascular procedures** are steadily increasing, with approximately 0.4M procedures performed annually (including surgical and interventional cases), driven by high heart disease prevalence and expanded access to catheterization labs and minimally invasive interventions.
- 2) **Neurosurgical procedures**, including brain and spine surgeries, are experiencing rapid growth, with an estimated ~0.30M procedures annually, fuelled by rising trauma cases, better recognition of neurological disorders, and adoption of advanced surgical technologies.
- 3) **Orthopaedic interventions** are rising steadily, with around 3.6M procedures performed each year, supported by an ageing population, higher musculoskeletal disorder incidence, and broader availability of joint replacement and trauma care.
- 4) **Ophthalmic surgeries** remain the largest segment, with ~11.6M procedures annually, driven by national cataract programs, increasing patient awareness, and growing uptake of premium eye surgeries.
- 5) **Other specialties**, including urology, oncology, dental, and bariatric surgeries, collectively account for over 149.8M procedures per year, reflecting rising awareness, improved tertiary care access, and expanding surgical infrastructure.

Procedure volumes across India's surgical specialties are steadily increasing, with ophthalmology leading in size while cardiovascular, neurological, orthopaedics, and other segments continue to expand. The market is evolving steadily, reflecting broader changes in healthcare utilisation and surgical demand.



Indian surgical procedure volume across major specialties (Volume in M, FY25)



Note(s): Total of surgical volume across major specialties excluding others
Source(s): 1Lattice analysis

5.3 Surgical operations across multiple high-growth applications represent significant strategic and market opportunities.

Surgical procedures across high-growth applications represent a critical avenue for strategic market positioning and long-term value creation. Post-COVID shifts in procedure volumes and hospital budgeting have contributed to heightened volatility across major product segments. Demand across surgical drapes, dressings, neuro-consumables, cranial fixation systems, shunts, and orthopaedic implants is influenced by tender cycles, hospital purchasing patterns, and seasonality in surgical volumes. In this environment, a diversified presence across surgical disposables, implants, instruments, and surgical apparel allows companies to participate in both high-volume and premium categories, covering key specialties such as cardiovascular, neurosurgery, orthopaedics, and ophthalmology.

- 1) In cardiovascular and orthopaedic domains, the increasing adoption of minimally invasive techniques, advanced implants, and procedural innovations is driving consistent demand for high-quality consumables, precision instruments, and protective surgical apparel. These segments not only offer scale but also provide opportunities to differentiate through technology-enabled, reliable, and efficient solutions.
- 2) Neurosurgery exemplifies the strategic importance of precision-driven and innovation-led procedures, where robotics, image-guided navigation, and minimally invasive approaches require specialised implants, instruments, and safety-oriented apparel. The complexity and high clinical stakes of these procedures create a clear premium opportunity for products and solutions that enhance accuracy, patient outcomes, and operational efficiency. Ophthalmology, as a consistently high-volume specialty, highlights the significance of standardised, high-performance consumables and surgical instruments, which support rapid, precise interventions and help maintain quality outcomes across diverse patient populations.
- 3) Emerging surgical segments such as oncology, bariatrics, and urology provide additional avenues for growth, capturing niche but strategically valuable opportunities. Rising awareness, improving access to tertiary care, and growing adoption of advanced technologies in these areas are enabling targeted solutions to deliver measurable clinical impact.

Collectively, these applications illustrate that the modern surgical market is not solely volume-driven but innovation and technology-led, where alignment with evolving surgical practices, procedure-specific demand, and premiumisation trends can translate into sustainable growth. By focusing on high-growth applications across multiple domains, players in the surgical ecosystem can leverage both market scale and specialisation, ensuring strategic relevance, resilience, and long-term value creation across the surgical landscape.



5.4 Key trends of surgical procedure market in India: Minimally invasive procedures, emerging surgical techniques, and rising specialty focused product demand.

The surgical landscape is undergoing rapid transformation, with several structural trends shaping demand across applications. The surgical procedure landscape in India is increasingly shaped by the adoption of minimally invasive procedures and innovative surgical techniques. These approaches not only improve patient recovery times and reduce postoperative complications but also drive demand for advanced implants, precision instruments, and procedure-specific disposables. Specialty-focused products, such as patient-specific implants and bioactive fixation devices, are gaining traction as surgeons seek tailored solutions for complex cases.

Minimally invasive procedures  • Strong adoption in cardiovascular, neurosurgical, orthopaedic, and ophthalmic domains. • Benefits include faster recovery, reduced hospital stays, and lower complication rates. • Driving demand for specialised consumables (drapes, surgical apparel) and advanced implants (stents, neurovascular devices, arthroscopy implants, intraocular lenses).	Emerging surgical techniques  • Robotic-assisted surgeries expanding in neurosurgery, urology, and orthopaedics • Image-guided navigation systems improving precision in spine and cranial procedures. • Energy-based and laser techniques gaining traction in ophthalmology and oncology • Increased procedural complexity is boosting demand for high-performance implants and instruments.
Rising product demand across specialties  • Cardiovascular: Steady consumption of stents, catheters, and sterile disposables. • Orthopaedics: Growth in trauma and joint replacement implants, driven by aging populations. • Ophthalmology: Largest volume segment; strong uptake of intraocular lenses and cataract kits • Neurosurgery: Fastest-growing segment, driven by trauma incidence and increasing neurological disease awareness.	Strategic takeaway  • Adoption of minimally invasive procedures and emerging techniques is reshaping product demand. • Growth is both volume-driven and technology-led, creating opportunities across implants, consumables, and instruments. • High-value and emerging segments offer long-term strategic growth opportunities for the surgical ecosystem.

6. Global and Indian implants market

6.1 Definitions and segmentation of the implants market.

Medical implants are the devices or tissues placed inside or on the surface of the body, typically through surgical or medical intervention, with the intent to remain there for a significant period either temporarily or permanently. Implants can serve a variety of purposes, such as replacing missing or damaged biological structures, supporting or enhancing existing tissues or organs, delivering medications, or monitoring physiological functions. Implants play an essential role in improving patient quality of life by alleviating pain, restoring mobility, enhancing sensory functions, or supporting vital organ functions. The medical implants market is categorised into distinct segments, providing a granular view of product types that address varied therapeutic needs. The implant segmentation highlights the diversity, ranging from established orthopaedic devices to advanced neuro and ophthalmic implants. This enables targeted strategies for innovation, market penetration, and regulatory compliance.

Implants are segmented based on clinical application, function and type biomaterials used. This segmentation helps to align product development and marketing strategies with specific clinical needs and regulatory pathways, enabling precise targeting of diverse patient populations and therapy areas.

6.1.1 Segmentation of implants by functionality:

Implants can be classified based on the role they perform within the body. This categorisation highlights their therapeutic, reconstructive, and supportive/substitutive purposes:

- 1) **Therapeutic implants:** Designed to restore or regulate physiological processes by therapeutic intervention. Examples include shunts for fluid drainage in hydrocephalus, penile implants for erectile dysfunction, and neurological devices such as cochlear implants or neurostimulators, which actively stimulate or regulate biological functions.
- 2) **Reconstructive implants:** Focused on restoring form and function following trauma, surgery, congenital defects, or degenerative conditions. These implants are particularly significant in orthopaedics and plastic surgery, where they help patients recover structural integrity and aesthetics. Examples include orbital or eye sphere implants, bone fillers, and breast implants following mastectomy.
- 3) **Supportive/Substitutive implants:** Designed to provide structural or functional support by replacing or reinforcing biological tissues. These implants are often used in neurological, vascular, and general surgical applications. Examples include dura patches for neurological repair, synthetic vascular grafts for bypassing or replacing damaged vessels, and surgical meshes used in hernia or tissue repair.



6.1.2 Segmentation of implants by type of biomaterials and biocompatibility material science used:

The implants market is evolving with a strong focus on safer, more durable, and patient-friendly biomaterials. Advances in ceramics, HA coatings, and adsorbables are driving innovation, while regulators in India, the US, and EU increasingly demand robust clinical data to validate long-term safety and efficacy.

Medical implants are classified based on the biomaterial used, which directly affects their performance, biocompatibility, and clinical application.

Types of biomaterials used:

- 1) **Ceramic biomaterials:** Widely used in orthopaedic, dental, and cranial implants owing to their excellent biocompatibility, strength, and wear resistance. Materials such as alumina, zirconia, and hydroxyapatite support effective bone integration and long-term stability.
- 2) **Metallic biomaterials:** Metals are preferred for joint replacements, spinal devices, dental implants, and cardiovascular implants because of their high durability, corrosion resistance, and load-bearing capacity. Some common examples include titanium and its alloys, cobalt-chromium alloys, and stainless steel.
- 3) **Polymeric biomaterials:** Polymers are utilised in ophthalmic implants, soft tissue implants, and fixation devices due to their flexibility, light weight, and ease of fabrication. Both biodegradable (e.g., polylactic acid, polyglycolic acid) and non-biodegradable polymers (e.g., silicone, polyethylene, PMMA) are employed depending on the clinical requirement.
- 4) **Natural biomaterials:** Derived from biological sources such as collagen, chitosan, and demineralised bone matrix, these materials are primarily used in bone grafts and tissue regeneration. Their superior integration with host tissues promotes effective healing and structural support.

Material science and biocompatibility trends affecting implants:

Advances in material science are reshaping the implant industry, moving beyond traditional metals to focus on biocompatibility, durability, and patient-friendly outcomes. The shift is driven by rising surgical volumes, demand for longer implant lifespans, and the need to minimise revision surgeries. The trends are specially observed in ceramics for orthopaedics, hydroxyapatite (HA) coatings, and absorbable materials, which are rapidly evolving to improve patient outcomes, minimise complications, and tailor solutions to complex medical needs.

- 1) **Bioinert ceramic materials:** Ceramic materials such as alumina and zirconia are increasingly used for orthopaedic and dental implants due to their outstanding biocompatibility, high wear resistance, and chemical stability. These bioinert ceramics serve in load-bearing implants (e.g., joint replacements) offering minimal tissue reaction and excellent longevity. A key trend is the shift toward ceramic-on-ceramic bearings in hip and knee arthroplasty, which show reduced revision rates and longevity exceeding 15-20 years, making them a preferred choice in younger, active patients.
- 2) **Bioactive coatings (hydroxyapatite and glass ceramics):** Hydroxyapatite (HA) and glass ceramics are widely used bioactive coatings for metallic implants to enhance fixation and promote bone growth. HA closely resembles the mineral composition of natural bone, encouraging biological bonding and reducing fibrous tissue formation, which improves long-term implant success. Glass ceramics offer additional bone-forming and blood-clotting benefits, with ongoing research exploring multifunctional coatings that combine antimicrobial and regenerative effects.
- 3) **Absorbable and bioresorbable materials:** Bioresorbable materials such as calcium phosphate ceramics (e.g., tricalcium phosphate, bioactive glasses), magnesium alloys, and certain polymers are transforming temporary implants. These materials gradually degrade in physiological environments without toxicity, being replaced by autologous tissue to avoid secondary removal surgeries. Trends include the adoption of calcium phosphate ceramics and magnesium alloys that naturally degrade while supporting bone regeneration, alongside bioresorbable polymers such as PLA and PGA. These innovations align with the broader trend of patient-friendly and cost-saving solutions in orthopaedic care.

6.1.3 Segmentation of implants by duration of use:

Implants can be segmented by their intended duration of application, which directly impacts material selection, regulatory classification, and clinical adoption:

- 1) **Permanent implants** are designed for long-term or lifelong use. These include orthopaedic prostheses, reconstructive devices, stents, and shunts. Stents, such as coronary, vascular, biliary, or urinary stents, are used to maintain vessel or duct patency and ensure continuous flow. Shunts, including cerebral and vascular types, are used for permanent fluid diversion in neurological or cardiovascular treatments. For such implants, material durability, biocompatibility, and infection resistance are essential to ensure safety and long-term functionality.



- 2) **Absorbable implants** are intended to degrade and be absorbed by the body over time, eliminating the need for secondary surgeries. These include bioresorbable grafts, fillers, and bioresorbable stents, which naturally dissolve after restoring vessel function. Absorbable implants are increasingly used in neurosurgery, trauma, and cardiovascular applications due to their reduced postoperative complications and biocompatible degradation profiles.
- 3) **Intraoperative implants** are used temporarily during surgical procedures for stabilisation, fluid diversion, or grafting. Examples include orthopaedic screws, rods, and plates, along with temporary shunts or catheters used to manage fluid flow during surgeries. Their primary value lies in enhancing procedural efficiency and ensuring patient safety during critical interventions.
- 4) **Subcutaneous implants** are devices placed beneath the skin for localised or systemic therapeutic purposes. These include drug-delivery implants, subcutaneous ports, and certain types of shunts used for long-term infusion or drainage. They are designed to offer sustained functionality while ensuring long-term tissue tolerance and minimal inflammatory response.

6.1.4 Segmentation of implants by cost tiers:

Medical implants can also be broadly segmented into tiers based on their cost and the level of technological advancement involved. This helps in understanding affordability, accessibility, and adoption patterns across different patient groups and healthcare settings:

Essential and low cost implants	Mid tier implants	Premium and niche implants
- Standardized products used in high-volume procedures, such as shunts, bone fillers, and dura substitutes. - These address critical needs in neurosurgery, ophthalmology, and reconstructive care, where affordability and accessibility are key purchase drivers.	- Devices that combine functionality with enhanced features, including specialized coatings (e.g., hydroxyapatite) or improved biocompatibility. - These are positioned between cost efficiency and differentiated performance.	- Advanced, bioengineered products such as ceramic-based devices, absorbable scaffolds, and tailored implants for complex or rare conditions. - These are priced at a premium, supported by clinical data and innovation-driven differentiation.

Source(s): 1Lattice analysis

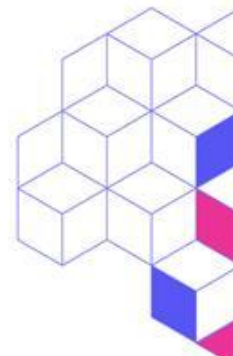
- 1) **Standardised implants** are often mass-produced using conventional materials like stainless steel or medical-grade polymers, allowing for economies of scale and easier regulatory approvals. This drives down cost and ensures widespread availability in both domestic and emerging markets. Devices such as routine orthopaedic plates and screws, dental implants, and conventional hip or knee prostheses typically fall within this category due to their uniform design and proven clinical performance.
- 2) **Mid-tier implants** incorporate advanced surface modifications, hybrid materials, or modular designs, which require more stringent testing and quality control, raising both cost and reliability. This includes products such as coated orthopaedic joints that enhance osseointegration, modular spinal fixation systems that offer surgical flexibility, and improved cardiac or vascular stents designed for higher biocompatibility and durability.
- 3) **Premium and niche implants** push boundaries by leveraging 3D printing, bioresorbable materials, and AI-driven personalised technologies that demand heavy R&D investment, longer approval timelines, and specialised distribution. This segment often includes patient-specific cranial or maxillofacial implants, bioresorbable vascular scaffolds that dissolve after healing, and smart orthopaedic implants equipped with sensors to monitor load or healing progress.

Additionally, the after-sales ecosystem differs across tiers. Standard implants rely on basic surgical training and minimal maintenance, while mid-tier products require specialised instrumentation and training programs for surgeons, adding to hospital costs but improving procedural outcomes. Premium implants often come bundled with digital monitoring platforms, data analytics, and personalised surgical planning software, making them not just products but end-to-end clinical solutions.

6.1.5 Segmentation of implants by application:

Implants can also be classified based on the **clinical conditions or medical fields** they serve:

- 1) **Neurological implants:** Advanced devices that interface with the nervous system, including cochlear implants for hearing restoration and neurostimulators (spinal cord stimulators, deep brain stimulators) for pain management and neurological disorders such as hydrocephalus shunt systems and cranial fixation devices.
- 2) **Orthopaedic implants:** The largest and most established segment, comprising joint reconstruction implants (like hip, knee, shoulder, ankle, etc.) for degenerative conditions, spinal implants (like rods, plates, screws, cages, etc.) for stabilisation and fusion, and trauma implants (like plates, nails, pins, etc.) for fracture fixation and bone healing along with orthopaedic bone graft substitutes (synthetic hydroxyapatite granules, bone cements).



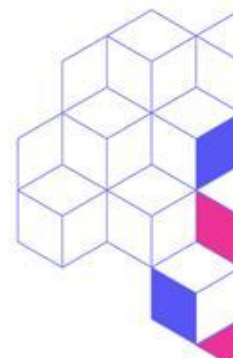
- 3) **Cranio-Maxillofacial (CMF) implants:** Implants for reconstructing skull, jaw, and facial bones in cases of trauma, congenital defects, or corrective surgery.
- 4) **Cardiovascular implants:** A broad category including cardiac rhythm management (like pacemakers, ICDs, CRT devices, etc.), vascular grafts and stents to repair or bypass blood vessels and heart valves (either mechanical or tissue) for replacement of diseased valves.
- 5) **Dental implants:** Titanium-based artificial tooth roots used to replace missing teeth and support prosthetics, including both endosteal and subperiosteal designs.
- 6) **Cosmetic implants:** Devices used for aesthetic or reconstructive purposes, such as breast implants (including saline and silicone), facial implants (like chin, cheek and jawline etc.), and gluteal implants for body contouring.
- 7) **Ophthalmic implants:** Vision-care implants such as intraocular lenses (IOLs) for cataract treatment and glaucoma implants to lower intraocular pressure.
- 8) **Other specialised implants:** Niche categories such as urological implants (e.g., penile implants, artificial urinary sphincters) and gastrointestinal implants (e.g., gastric bands).

Functional segment	Key examples	Major use case
Neuro implants	Interbody fusion, cervical fixation devices, spinal rods/screws, spinal electrical stimulation, VCF devices, Cranial plates	Stabilize, fuse, or correct the spine for disorders or trauma; relieve nerve compression or deformity and cranial repair
Orthopaedic implants	Joint reconstruction (hip, knee, shoulder), spinal devices, trauma fixation, extremities, orthobiologics	Replacement or support for damaged bones/joints/spine due to injury, arthritis, or degenerative disease; includes plates, screws
Cardiovascular implants	Pacemakers, stents, structural heart implants, defibrillators	Restore heart rhythm, maintain blood vessel patency, support heart structure; address cardiac diseases and vascular disorders
Ophthalmic implants	Intraocular lenses, glaucoma implants	Restore vision, manage glaucoma, or replace lens after cataract removal
Breast implants	Silicone, saline-filled implants	Breast reconstruction or augmentation after mastectomy or injury
Urological implants	Penile implants (inflatable, semi-rigid), urinary catheters, artificial urinary sphincters	Provide treatment for erectile dysfunction, urinary incontinence, or obstruction

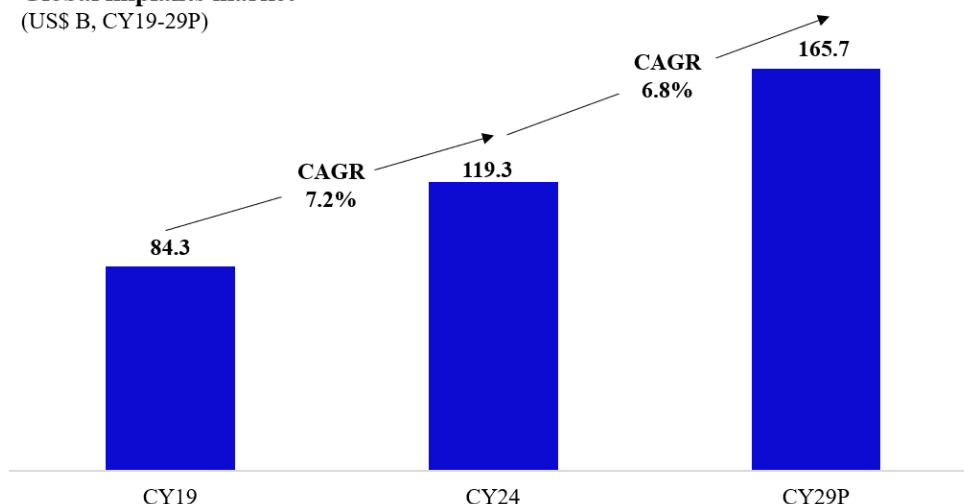
Source(s): 1Lattice analysis

6.2 The global implant market is valued at US\$ 119.3B (INR 10.1T) in CY24 and is expected to reach US\$ 165.7B (INR 14.1T) in CY29P, growing with a CAGR of 6.8% from CY24-29P.

The global implant market is experiencing significant growth across regions, driven by increasing surgical demand and advances in medical technology and is on a strong growth trajectory, driven by increasing prevalence of chronic conditions and rising demand for advanced surgical interventions. Continuous innovation in materials and techniques is enhancing outcomes and adoption. Growing healthcare access and awareness are further supporting sustained market expansion.



Global implants market
(US\$ B, CY19-29P)

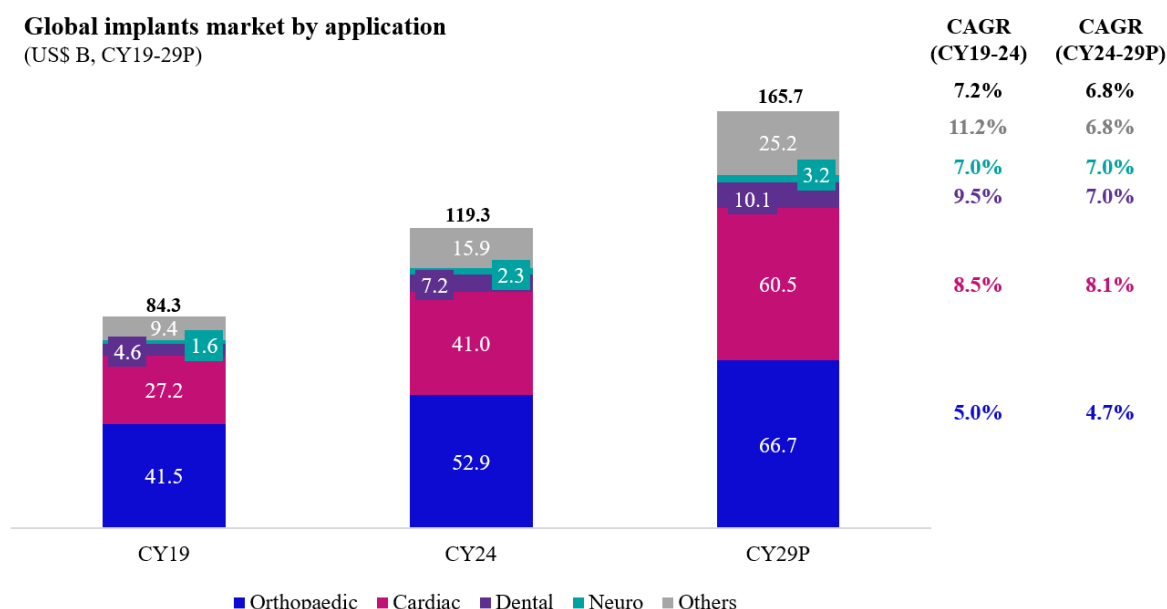


Source(s): 1Lattice analysis

The growth is driven by ageing population, rising trauma and chronic disease burden, technological advancements in biomaterials and 3D printing, and increasing demand for both therapeutic and elective surgical interventions across orthopaedics, neurology, ophthalmology, cardiovascular, and dental segments.

6.3 Global implant market is dominated by orthopaedics segment valued at US\$ 52.9B (INR 4.5T) growing at a CAGR of 4.7% from CY24 to CY29P.

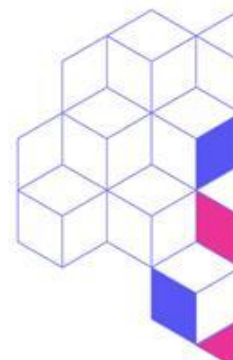
Global implants market by application
(US\$ B, CY19-29P)



Source(s): 1Lattice analysis

The global medical implants market is witnessing steady expansion, driven by demographic shifts, lifestyle diseases, and rising healthcare access. While orthopaedic implants continue to dominate but increasing demand for cardiac, dental, neuro, and aesthetic implants is reshaping the overall market composition.

- **Orthopaedic implants** continue to dominate, estimated to reach US\$ 66.7B (INR 5.6T) by CY29P with a CAGR of 4.7% backed by growing cases of musculoskeletal disorders, sports injuries, and joint replacements. The global trend of early adoption of 3D-printed patient-specific implants and minimally invasive techniques is further accelerating growth.

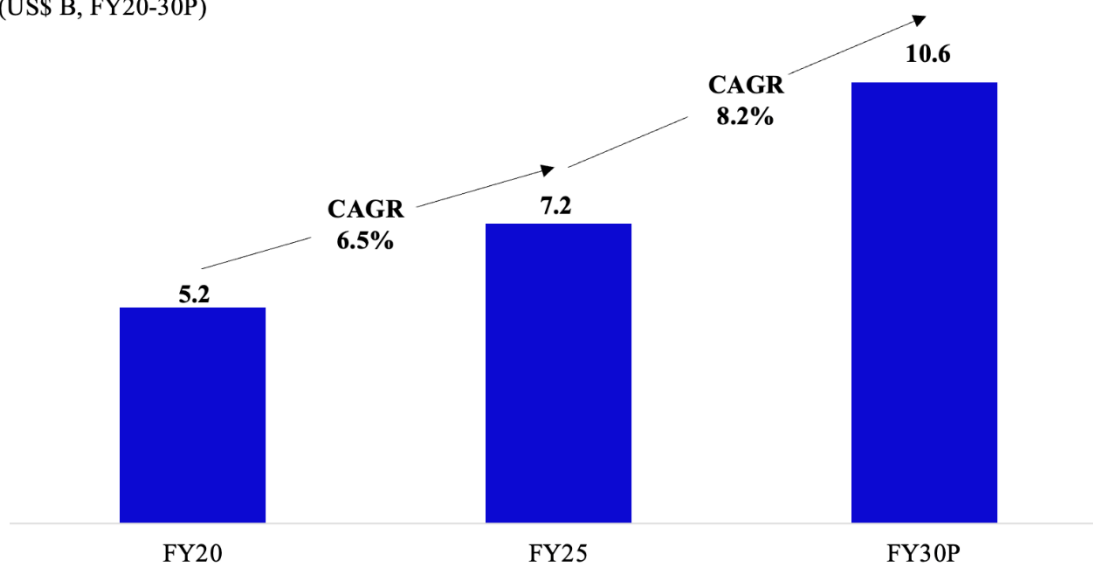


- **Cardiological implants** segment is projected to increase from US\$ 41.0B (INR 3.4T) in CY24 to US\$ 60.5B (INR 5.1T) in CY29P, growing at a CAGR of 8.1%. This growth is fuelled by innovations in implantable cardiac devices, greater adoption of minimally invasive procedures, and the expansion of advanced cardiac care facilities.
- **Dental implants** segment accounts for a significant portion of the Indian market, growing from US\$ 7.2B (INR 607.6B) in CY24 to US\$ 10.1B (INR 852.6B) in CY29P at a CAGR of 7.0%. Growth is driven by rising demand for aesthetic dentistry, wider adoption of digital workflows in dental procedures, and improved access to modern dental clinics across urban and semi-urban areas.
- **Neurological implants** are gaining prominence, estimated to reach US\$ 3.2B (INR 272.1B) by CY29P with growing applications in deep brain stimulation, spinal cord stimulators, and hydrocephalus shunts. Increasing prevalence of neurodegenerative diseases and wider adoption of neuromodulation therapies are major growth drivers.

6.4 The Indian implant market is valued at US\$ 7.2B (INR 608.8B) in FY25 and is expected to reach US\$ 10.6B (INR 896.3B) in FY30P, growing with a CAGR of 8.2% from FY25-30P.

The Indian implant market is witnessing steady expansion, driven by rising healthcare access, increasing surgical volumes, and adoption of advanced biomaterials. This growth reflects sustained demand for innovative implants and the country's evolving healthcare infrastructure and is characterised by rising affordability of advanced procedures, increasing penetration of health insurance, and greater acceptance of implants beyond metro cities. Strategic collaborations between global device makers and Indian manufacturers are boosting technology transfer and local availability, while regulatory streamlining is expected to accelerate product approvals. With a large patient pool and evolving reimbursement landscape, India is emerging as one of the most attractive implant markets in Asia.

Indian implants market
(US\$ B, FY20-30P)



Source(s): 1Lattice analysis

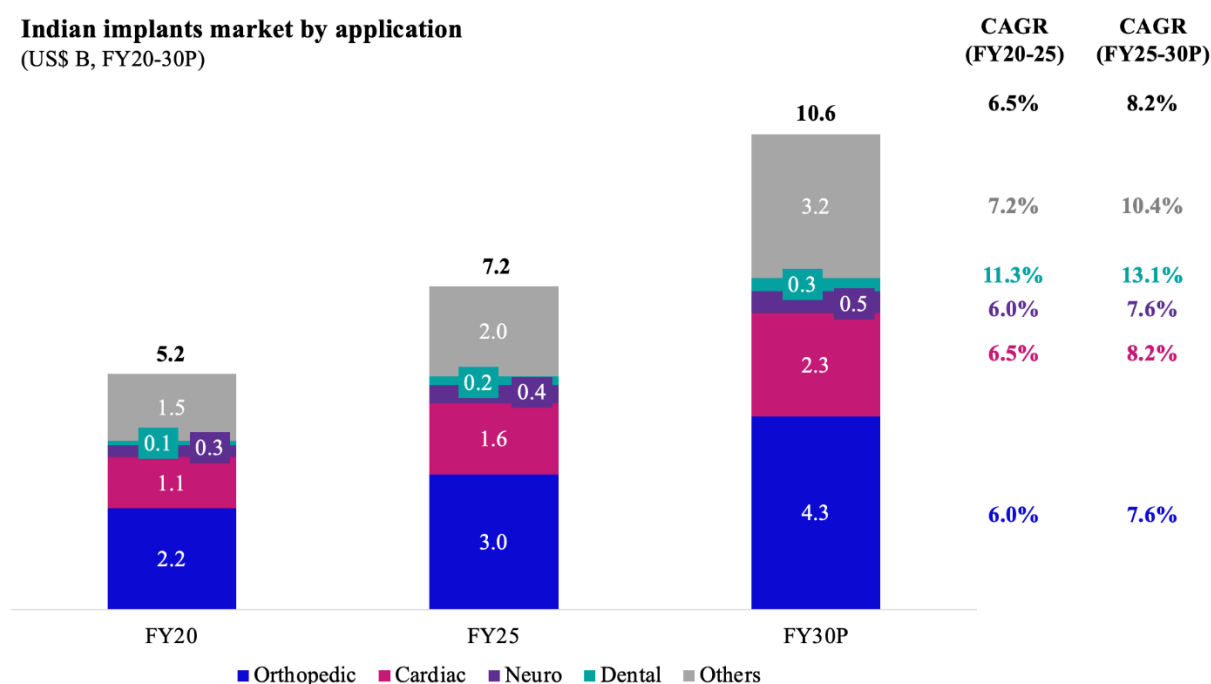
This growth is primarily driven by rising cases of trauma injuries, orthopaedic disorders, cardiovascular diseases, dental conditions, and neurological disorders, along with increasing awareness and access to advanced surgical procedures. Improved healthcare infrastructure, rising medical tourism, and greater insurance penetration are also key enablers. In addition, government-led initiatives to support local manufacturing under “Make in India,” coupled with cost advantages, are expected to drive affordability and adoption. Increasing surgeon training and collaborations with international device manufacturers are further expanding clinical adoption.

6.5 Indian implants market by functionality is led by orthopaedic implants, valued at US\$ 3.0B (INR 253.7B) in FY25 and projected to reach US\$ 4.3B (INR 363.6B) by FY30P, growing at a CAGR of 14.7%.

Orthopaedics to lead India's implant market with 40.6% share and US\$ 4.3B (INR 363.6B) revenue by FY30P. India's medical implants market is experiencing rapid growth due to rising demand for minimally invasive treatments, increasing awareness, and government support for advanced medical technology. The sector is segmented by functionality, reflecting diverse clinical



applications across orthopaedic, cardiovascular, dental, ophthalmic, neurostimulator, facial, and breast implants. This broad segmentation demonstrates the dynamic nature of the market and highlights the significant impact modern implant technologies are having on healthcare delivery in India.



Source(s): 1Lattice analysis

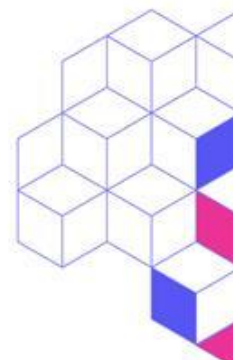
- **Orthopaedic implants** represent the largest segment, expected to reach US\$ 4.3B (INR 363.6B) by FY30P at a CAGR of 7.6%, supported by rising osteoarthritis and fracture cases, an ageing population, and growing adoption of joint replacements.
- **Cardiac implants** market is expected to expand from US\$ 1.6B (INR 135.3B) in FY25 to US\$ 2.3B (INR 194.5B) in FY30P, growing at a CAGR of 8.2%. This growth is fuelled by the wider availability of cardiac interventions, adoption of advanced imaging and minimally invasive procedures, and increased awareness of cardiovascular health.
- **Neuro implants** are gaining traction, expected to expand reach US\$ 0.5B (INR 42.28B) by FY30P at a CAGR of 7.6%, supported by increasing incidence of neurological disorders such as Parkinson's and epilepsy, and advancements in deep brain stimulators and shunt systems. Awareness of advanced neurosurgical treatments and a growing pool of trained neurosurgeons are key contributors.
- **Dental implants** market is projected to grow from US\$ 0.2B (INR 16.9B) in FY25 to US\$ 0.3B (INR 25.4B) in FY30P, at a CAGR of 13.1%. This growth is driven by the rising demand for aesthetic dentistry and cosmetic procedures, increasing disposable income, and greater access to dental care across tier 2 and tier 3 cities.

6.6 Analysis of the global and Indian shunt market landscape.

The global shunts market remains a specialised but essential segment within neurosurgical care, marked by consistent clinical demand and gradual technological refinement. It reflects stable volumes with moderate value growth driven by sustained procedure rates worldwide. In India, the shunts market is evolving with improving healthcare accessibility and procedural capacity. While still nascent compared to global benchmarks, it shows a clear upward trend in adoption and market maturity.

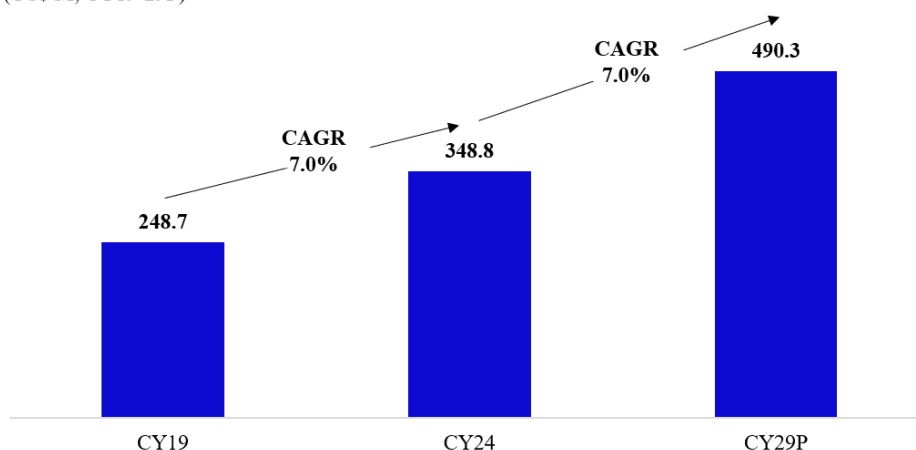
6.6.1 The Global shunts market was valued at US\$ 348.8M (INR 29.5B) in CY24, at a CAGR of 7.0% from CY24-29P, reaching US\$ 490.3M (INR 41.5B) by CY29P.

The global shunt market has experienced steady growth since CY19 and is projected to expand at a CAGR of 7%, reflecting consistent clinical demand and gradual technological refinement in neurosurgical care. This growth is supported by increasing surgical interventions, broader adoption of programmable and pressure-regulated shunt systems, rising awareness and diagnosis rates, and improvements in hospital infrastructure and neurosurgical capabilities across both developed and emerging regions.



Shunts constitute a larger portion of the neurosurgical device market globally, representing 15.2% of the global neurological market.

Global shunts market
(US\$ M, CY19-29P)

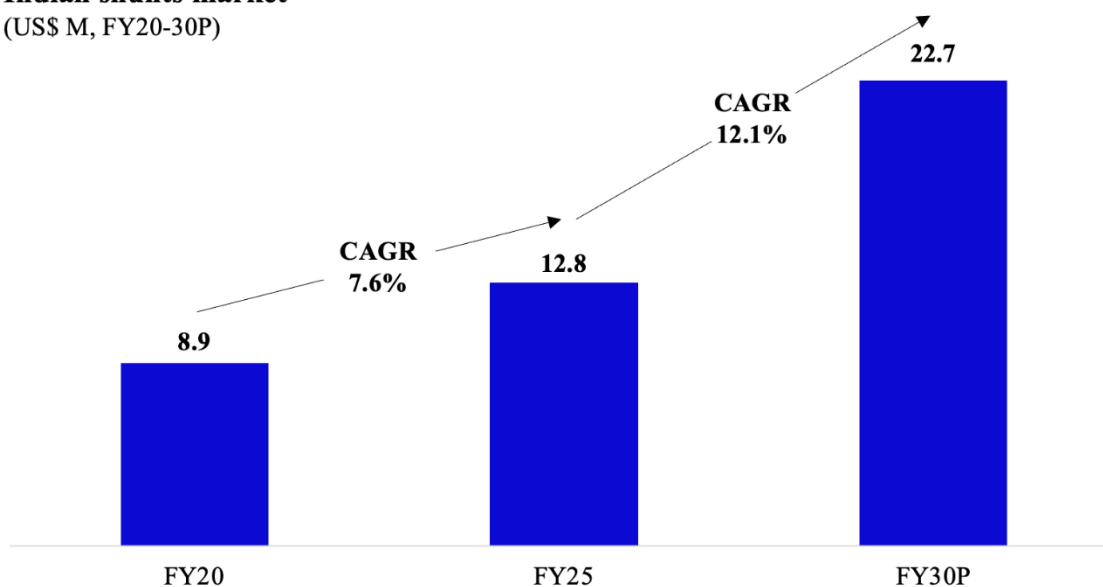


Source(s): 1Lattice analysis

- 6.6.2 The Indian shunts market is valued at US\$ 12.8M (INR 1.1B) in FY25, grown at a CAGR of 7.6% from FY20 to FY25. The market is projected to accelerate at a CAGR of 12.1% from FY25 to FY30P, reaching US\$ 22.7M (INR 1.9B) by FY30P.**

This growth is being driven by rising prevalence and awareness of hydrocephalus, advancements in shunt technology including minimally invasive and programmable devices, and the expansion of specialised neurosurgical facilities across the country. The Indian shunts market is at a pivotal stage of growth, accounting for ~3.6% of the total neurological implants market in India in FY25. India constitutes 3.7% of the global shunt market in CY24 and is projected to reach 3.8% by CY29P, reflecting a modest but steady increase in its contribution.

Indian shunts market
(US\$ M, FY20-30P)



Source(s): 1Lattice analysis

A significant gap is visible between the number of patients requiring and receiving shunt-based interventions, indicating a substantial untapped demand in the market. Rapid improvements in healthcare infrastructure, particularly the expansion of



neurosurgical and specialty care units across tier 2 and tier 3 cities, are increasing access to advanced treatments and gradually bridging this gap. Government-backed health insurance programs such as Ayushman Bharat are further reducing financial barriers, enabling more patients to undergo necessary procedures. In parallel, the rise of domestic manufacturing is lowering dependence on costly imports, improving price competitiveness, and ensuring wider product availability. Moreover, the market benefits from the high incidence of shunt revisions, which creates a recurring demand base and drives long-term revenue stability.

6.6.3 Indian shunts market portfolio by application and its clinical relevance.

The Indian shunt market comprises various types of shunts designed to treat different clinical forms of hydrocephalus and related conditions. Key product categories include ventriculoperitoneal (VP) shunts, ventriculoatrial (VA) shunts, lumboperitoneal (LP) shunts, and programmable shunts. Each category serves a unique clinical purpose with specialised features aimed at improving patient outcomes.

- 1) **Ventriculoperitoneal (VP) shunts:** The most used shunt, diverting cerebrospinal fluid (CSF) from the brain to the abdominal cavity. Features include programmable valves and antimicrobial coatings to reduce infections.
- 2) **Ventriculoatrial (VA) shunts:** An alternative for patients with abdominal contraindications, shunting CSF to the heart's atrium. Valves here are designed to prevent over drainage and manage cardiovascular compatibility.
- 3) **Lumboperitoneal (LP) shunts:** Used mainly for normal pressure hydrocephalus, these shunts redirect CSF from the lumbar area to the abdomen and offer a less invasive surgical option.
- 4) **Programmable shunts:** Advanced devices with adjustable valves that enable non-invasive management of CSF pressure, reducing the need for revision surgeries.

Growth drivers and restraints with nuances for specific applications:

The Indian shunt market is witnessing steady growth due to rising hydrocephalus cases, enhanced healthcare services, and growing awareness among healthcare providers and patients. The expanding neurosurgical infrastructure and advancements in shunt technology, such as programmable valves and antimicrobial coatings, are further supporting market expansion. However, challenges like high device costs and limited access to skilled neurosurgeons in rural areas may constrain growth in some regions.

Growth drivers	Growth barriers
• Rising hydrocephalus incidence: increasing number of diagnosed hydrocephalus cases, including in neonatal and aging populations, is driving demand for shunt devices.	• High cost of advanced shunts: cutting-edge features like programmable valves increase overall device costs, limiting affordability in price-sensitive segments.
• Advancements in neurosurgical care: expansion and modernization of neurosurgical centers improve access to treatment and encourage adoption of shunt technology.	• Risk of infection and complications: despite technological improvements, shunt infections and failures remain clinical challenges affecting patient outcomes.
• Growing awareness: enhanced awareness amongst healthcare professionals and patients about the benefits of early diagnosis and treatment boosts market growth.	• Skilled surgeon shortage: limited availability of trained neurosurgeons, particularly in rural and semi-urban areas, restricts market penetration.
• Technological innovations: introduction of programmable valves, antimicrobial coatings, and MRI-compatible shunts improve treatment efficacy and safety, stimulating demand.	• Regulatory and approval delays: lengthy regulatory processes can delay launch of innovative products in the Indian market.
• Government support: health programs and initiatives focusing on neurological disorders promote availability and affordability of implantable devices like shunts.	• Lack of awareness in certain regions: low knowledge about hydrocephalus and treatment options in remote areas limits diagnosis and treatment rates.

Shunts play a critical role in managing hydrocephalus across diverse patient groups, with nuanced applications tailored to clinical needs. For paediatric patients, shunts are designed to accommodate smaller anatomies and support growth, ensuring long-term durability. In adults, especially those with normal pressure hydrocephalus, less invasive shunt options provide effective treatment while minimising surgical risks. Complex cases, such as patients with abdominal complications, often require alternative shunt placements like ventriculoatrial shunts. These application-specific considerations drive innovation in shunt design and function, improving patient outcomes across varied clinical scenarios.



The Indian shunt market is advancing due to technological innovation and improved healthcare access. Programmable, MRI-compatible, and antimicrobial-coated shunts are increasingly preferred, alongside minimally invasive surgical techniques that enhance recovery. The market currently relies heavily on imports, though government initiatives like “Make in India” and domestic innovation aim to reduce this dependency. Material advancements, smart shunts, and miniaturised designs are improving safety, personalisation, and clinical outcomes, supporting robust market growth.

6.7 Regulatory framework, risk-based classification and clinical data requirements for surgical implants

Surgical implants require stringent regulation to ensure patient safety and product quality. Since implants vary from low to high risk, health authorities use classification systems and demand supporting clinical evidence. These frameworks guide approvals, monitoring, and long-term safety, forming the basis for how different markets regulate and evaluate implants. Against this backdrop, the following sections outline how implants are regulated and the clinical data expectations across major markets.

Classification approaches of surgical implants

Medical implants are regulated globally through risk-based frameworks that ensure safety, quality, and effectiveness. Devices are classified into categories depending on their potential risk to patients. To regulate these effectively, global health authorities follow risk-based classification frameworks that align the level of regulatory oversight with the potential impact on patient health. This approach ensures that low-risk devices undergo basic compliance checks, while high-risk implants are subject to stringent evaluations, clinical trials, and ongoing safety monitoring. Such classification not only protects patients but also provides clear pathways for manufacturers to bring innovations to market responsibly.

- **Low risk (Class I/A):** These are non-invasive or external devices with minimal potential for harm. They are often used for support or protection rather than life-sustaining functions. Common examples include dental crowns, orthopaedic braces, and surgical mesh used externally or superficially.
- **Moderate-risk (Class II/B):** These implants enter the body but pose a relatively lower risk compared to life-sustaining devices. They require performance testing and moderate regulatory oversight. This category includes orthopaedic plates and screws, dental implants, and intraocular lenses used in cataract surgeries.
- **High-risk (Class III/C–D):** These are life-sustaining or critical implants that interact directly with vital organs or systems, demanding the highest level of regulatory control and clinical validation. Examples include cardiac pacemakers, artificial heart valves, and neurostimulators used in the brain or spinal cord for neurological regulation.

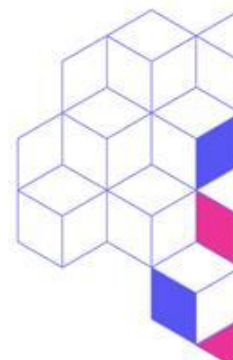
6.7.1 Regulatory and clinical data expectations for implants across major markets

Expectations for clinical data differ across regions but share the goal of demonstrating safety and effectiveness.

- **US clinical data expectations:** The FDA divides devices into three classes based on risk, with Class III (high risk, such as implants) requiring substantial clinical data, including premarket approval (PMA) with well-designed clinical trials. Approval pathways include 510(k) for predicate devices, PMA for novel or high-risk devices, and De Novo for new technologies. The FDA emphasises clinical evaluation, post-market vigilance, and adverse event reporting via Medical Device Reporting (MDR). Many implants, particularly Class III, require randomised controlled trials demonstrating safety and effectiveness followed by post-approval studies or registries.
- **EU clinical data expectations:** The EU MDR 2017/745 strengthened obligations for clinical evidence, requiring clinical investigations for most implantable devices to demonstrate safety and performance. Manufacturers undergo assessment by notified bodies; CE marking is based on conformity with MDR, incorporating clinical evaluation reports, risk management data, and post-market surveillance plans. Unique Device Identification (UDI), expanded registries, and mandatory post-market clinical follow-up improve traceability and transparency. Implants require even more robust clinical trial data than in the previous Medical Devices Directive (MDD).
- **India clinical data expectations:** India’s CDSCO regulates medical implants through Medical Device Rules (MDR) 2017, classifying them into four tiers by risk (Class A–D). Higher-risk devices (Class C and D, including most implants) require more extensive clinical data. India mandates clinical trials if the implant is novel or non-approved in reference countries (US/EU/Canada/Japan/Australia). Devices already approved in these countries may be granted waivers or reduced requirements. Since October 2023, import licenses for all classes require documentation of product quality, safety, and when applicable clinical data. Increasingly, the Indian system is moving toward global harmonisation, but implementation and infrastructure challenges remain.

6.8 Competitive players in the Indian implants market (domestic and multinational companies)

The Indian implant market features a mix of multinational companies offering advanced, high-tech implants and domestic manufacturers focusing on cost-effective, essential products. MNCs dominate urban and premium segments with strong R&D and global supply chains, while local players serve tier 2 and 3 cities through regional distributors. This evolving market



structure supports growing demand and increasing collaboration between global and local firms to improve implant accessibility across India.

The Indian orthopaedic implant market features a mix of domestic and multinational companies catering to diverse patient and hospital needs. Leading domestic orthopaedic players include Meril Life Sciences, Sharma Orthopaedic, Narang Medical Limited, Biorad Medisys, and Bonetech, offering cost-effective and essential implants for joint replacement, trauma, and spinal fixation. On the multinational side, companies such as Stryker, Zimmer Biomet, Smith+Nephew, DePuy Synthes, and Arthrex dominate the premium segment with advanced, high-tech solutions. Similarly, the neurosurgery implant space in India is served by domestic companies like GPC Medical Limited, Auxein, Gesco Healthcare, and KLS Martin Group, while multinational corporations including Stryker, Medtronic, B. Braun, Integra, and DePuy Synthes provide technologically sophisticated neuro implants such as programmable shunts, neurostimulators, and deep brain stimulation devices, catering primarily to metropolitan hospitals and referral centres.

In India, hydrocephalus shunt systems are supplied by domestic companies such as G. Surgiwear Limited (hereinafter referred to as **“the Company”**), Medical Equipment India, BTS Synergy, and Pushkar Surgical & Pharma, offering Z Flow, Slit N Spring, and Chhabra VP systems for paediatric and adult patients. For the year ended March 31, 2025, G. Surgiwear Limited has a market share of 21.87% in the hydrocephalus shunt segment in terms of revenue. Multinational players like Medtronic, B. Braun, Integra LifeSciences, Spiegelberg, and Sophysa provide advanced programmable shunts, primarily in urban hospitals and specialised neurosurgical centres.

Indian manufacturers have rapidly strengthened their presence, moving beyond just affordability and essential products to embrace innovation and scale. They leverage government support through “Make in India” and other incentives, invest in R&D, and focus on export-oriented growth. By expanding manufacturing capacity, adopting quality certifications, and forming strategic partnerships, these firms consistently gain market share and contribute to India’s emergence as a global MedTech manufacturing hub. Demand from tier 2 and 3 cities, improved insurance coverage, and rising medical tourism further fuel domestic portfolio diversification and competitiveness against multinational counterparts.

6.9 Business models of key players in the market

Leading multinational companies such as DePuy Synthes (J&J), Stryker, Zimmer Biomet, Smith+Nephew, Medtronic, and Arthrex dominate the premium orthopaedic segment worldwide. These players primarily focus on high-value innovation, clinical evidence, and strong engagement with surgeons and hospitals to maintain leadership in developed markets.

- Full-stack manufacturing involves companies like Stryker, Zimmer Biomet, and Medtronic managing the entire value chain from design and development to manufacturing and sales of orthopaedic implants and instruments, ensuring stringent quality control and product reliability.
- Component specialisation sees some firms focusing on niche areas such as proprietary biomaterials, advanced surgical tools, or specialised implants including sensor-embedded or 3D-printed components, providing technological differentiation.
- Technological partnerships allow collaborations with research institutions or other companies to integrate new technologies into product lines, supporting continuous innovation.
- Acquisitions involve global majors frequently acquiring smaller, innovative companies to gain access to cutting-edge technologies or expand into new market segments.
- Surgeon engagement and clinical evidence ensure direct interaction with surgeons through training programs, workshops, and clinical trials, promoting widespread adoption and strengthening brand credibility.

Indian orthopaedic companies such as Meril Life Sciences, SMT, Shalby Advanced Technologies, and Sharma Orthopaedic operate in a cost-sensitive and emerging market environment, adapting global strategies to local needs while expanding selectively into international markets.

- Contract manufacturing includes several companies producing implants and components for global brands, leveraging lower production costs and skilled manufacturing capabilities.
- Distributorships and reselling see many businesses acting as authorised distributors for both domestic and international brands, focusing on sales, supply chain, and market penetration.
- Pharma franchise models allow some firms to distribute orthopaedic medicines through a franchise-based approach, leveraging established networks and brand names.
- In-house manufacturing involves growing companies such as Sharma Orthopaedic developing and producing their own range of implants, targeting both domestic and export markets.



- Cost-effective solutions emphasise the production of affordable, high-quality implants to meet the large healthcare needs of India and other emerging economies.
- Surgeon and hospital collaboration ensures Indian players engage surgeons through training programs and workshops, promoting clinical adoption and building trust in their products.

Key entry barriers in the market: Entering the Indian implant market involves navigating several significant barriers. These barriers collectively create a high threshold for new entrants, favouring experienced and resource-rich players in the Indian implant market.

- **Regulatory compliance** is complex, requiring adherence to stringent quality standards and product approvals, which can delay market entry for new players.
- **High capital investment** is needed to establish manufacturing facilities and quality control processes.
- **Building clinical credibility** with surgeons and hospitals demands substantial time and resources.
- **Creating robust distribution** and after-sales service networks is essential but challenging for new entrants. Continuous innovation and managing intellectual property also add to the hurdles faced by companies aiming to enter this space.
- **Innovation pressure** is constant for the implant industry, with rapid advances in biomaterials, 3D printing, and surgical techniques requiring continuous R&D investment to stay relevant.
- **IP and legal risks** such as patents, licensing issues, and litigation remain high, as companies compete to protect technology and navigate complex regulatory frameworks.

7. Global and Indian surgical disposables market

7.1 Definitions and segmentation of the surgical disposables market

Disposables are single-use consumable medical products, including drapes, gowns, equipment covers, procedure packs, dressings, suction and irrigation sets, and single-use vascular or endoscopic accessories. These products help maintain a sterile field, protect patients and staff, and manage fluids and devices during procedures. Disposable products also reduce the risk of infection, simplify logistics, and enable predictable kit-based workflows. These products are used across operating theatres, catheterization labs, interventional suites, and outpatient clinics. Procurement is driven by measurable performance attributes such as sterility, resistance to fluid strike-through, strong adhesion, tear strength, absorbency, and compatibility with imaging or microscope-guided workflows. Manufacturers increasingly deliver high-quality products, such as, procedure-specific kits to accelerate operating-room turnover, lower reprocessing costs, and simplify supply management.

Disposables are segmented based on functionality, end-use, and application. Functionality-based segmentation includes protective wear, surgical drapes and gowns, wound care products, and procedural kits. End-use segmentation covers hospitals, ambulatory surgical centres, diagnostic labs, and home healthcare. By application or site of care, disposables are categorised into general surgery, cardiology, neurology, orthopaedics, gynaecology, oncology, and other specialties.

7.1.1 Segmentation of surgical disposables by functionality

Surgical disposables can be categorised based on their primary functionality in surgical and clinical settings. Each segment addresses specific needs in infection control, sterility, and patient safety:

- 1) **Surgical site draping:** Surgical drapes form one of the largest categories of disposables, providing a sterile barrier and fluid control at the incision area. They include major, minor, and incise drapes as well as specialised products such as neurosurgery, laparoscopic, arthroscopy, hip, and knee drapes, catering to varied surgical disciplines.
- 2) **Equipment and device protection:** This segment covers disposable covers for surgical equipment to prevent contamination. Common products include C-arm covers, image intensifier drapes, microscope drapes, and camera cable covers, reinforcing the role of disposables in comprehensive sterile solutions.
- 3) **Barrier protection:** Products in this category include gowns, shields, and viral-protection kits that safeguard both staff and patients. Disposable gowns, barrier kits, head and eye shields, and surgical towels help institutions meet stringent infection-control standards.
- 4) **Wound care and dressings:** Disposable dressings and meshes protect surgical wounds and support healing in post-operative or emergency care. Offerings typically include burn mesh dressings, pressure dressings, eye pads, and general-purpose surgical dressings.
- 5) **Fluid management and irrigation:** This segment encompasses suction sets, irrigation tubing, and related fluid-control products. Although critical globally, these products remain less developed in many regional markets due to limited supplier presence and under-marketing.

7.1.2 Segmentation of surgical disposables by end use

Disposable usage varies significantly by the type of healthcare setting. Each end-use environment demands tailored products:

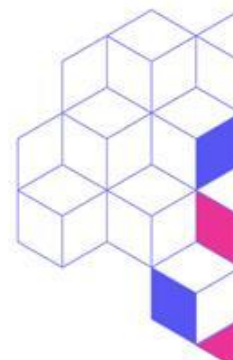


- 1) **Hospital operating rooms (inpatient ORs):** Products typically include sterile drapes, surgical gowns, sterile gloves, adhesive/incise films, procedure packs (kits), suction tubing and single-use instruments. Preferred features include guaranteed sterility on delivery, fluid resistance, adhesive edges or ergonomic cuffs, lint-free/low-particulate materials, and standardised kit contents to speed setup and reduce errors.
- 2) **Cath labs and interventional radiology:** Common disposables are introducer sheaths, diagnostic and interventional catheters, guidewires, guide catheters, single-use contrast/flush syringes and procedure drapes. These require biocompatibility, kink-resistance, radiopacity, appropriate lubricity or hydrophilic coatings and consistent torque/trackability for safe vascular navigation.
- 3) **Outpatient/clinic:** Disposable syringes and needles, simple wound dressings and bandages, specimen swabs/containers, gloves and small procedure trays. Key priorities include sterility, easy-to-use packaging, sharps safety features, and adequate absorbency/protection.

7.1.3 Segmentation of surgical disposables by application

Segmentation by application or site of care reflects how disposable products are customised for diverse surgical and clinical specialties. From neurosurgery to gynaecology, each field requires procedure-specific kits and drapes designed to meet distinct clinical challenges and workflow needs.

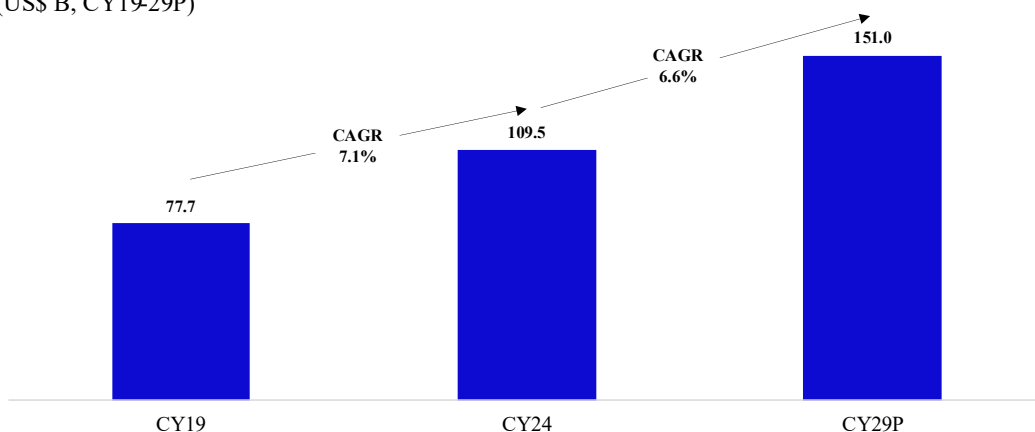
- 1) **Neurosurgery:** Procedure-specific craniotomy/neuro drapes provide wide coverage, integrated incise films, and fluid-collection pouches to control blood and irrigation while maintaining a sterile field during microscope-guided procedures. These drapes are designed for strong adhesion around the incision and for compatibility with neurosurgical equipment.
- 2) **Ophthalmology (eye surgery / phacoemulsification):** Ophthalmic drapes and sterile EENT sets include adhesive incise films, small aperture drapes, and fluid pouches to isolate lids/eyelashes and keep a very low-particulate optical field for microscope work (phaco, keratoplasty). Disposable microscope covers and sterile instrument kits reduce contamination risk and speed turnover.
- 3) **Orthopaedics:** Orthopaedic drapes and procedure sets (hip/knee replacement, arthroscopy, trauma) prioritise high tear-strength, reinforced “zone” barriers, and high absorbency to manage large volumes of blood/irrigation. Many suppliers offer all-in-one orthopaedic drape systems and procedure trays to improve OR efficiency and protect against strike-through.
- 4) **Cardiac cath labs:** Cath lab and angiography disposables include angiography drapes, sterile C-arm covers, sterile procedure packs and vascular access kits (sheaths, diagnostic/therapeutic catheters, guidewires and manifolds). These items are optimised for fluoroscopic procedures and single-use vascular access that reduce cross-contamination.
- 5) **Laparoscopic & general surgery:** Minimally invasive kits use trocar drapes, laparoscopic-specific drapes, and adhesive incise films to seal ports and isolate the abdomen. General-surgery disposable sets (laparotomy/laparoscopy drapes, instrument covers, suction/irrigation disposables) are widely available from major surgical suppliers.
- 6) **Obstetrics, urology & minor procedures:** OB/Gyn disposables (maternity/caesarean drapes, maternal drape sets) focus on large fluid management pouches and adhesive seal zones. Urology and scope-based procedure trays include scope covers, sterile trays, and single-use accessories to simplify reprocessing and reduce infection risk.



7.2 Global surgical disposables market

7.2.1 The global surgical disposables market is valued at US\$ 109.5B in CY24, and is projected to reach US\$ 151.0B in CY29P, growing at a CAGR of 6.6% from CY24-29P.

Global surgical disposables market
(US\$ B, CY19-29P)



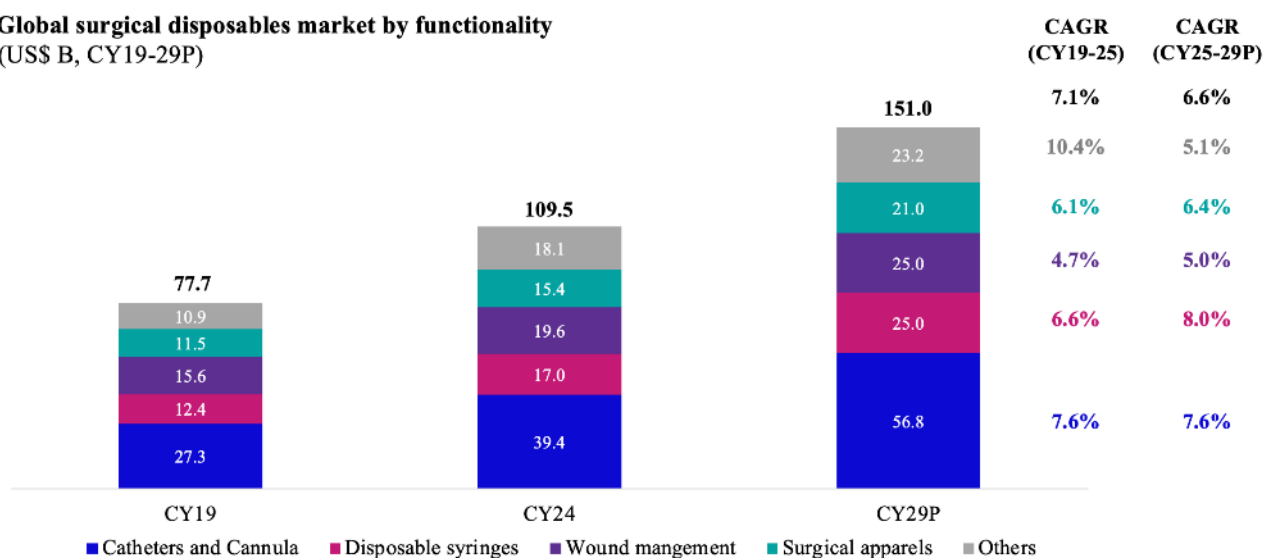
Source(s): 1Lattice analysis

The global surgical disposables market is valued at US\$ 109.5B in CY24, growing at a CAGR of 7.1% from CY19-24. The rising surgical procedure volumes, increased awareness of hospital-acquired infections, and stringent infection control protocols worldwide, have fuelled growth. The disposable drapes segment dominates due to barrier protection, while wound dressings represent a fast-growing sub-segment.

7.2.2 The global surgical catheters and cannula accounts for 32.2% share in the surgical disposables market, followed by wound management with 18.4% and disposable syringes with 14.6% market share.

The surgical disposables market, based on functionality, is segmented into catheters and cannulae, disposable syringes, wound management, apparel and an “others” segment. The latter includes CPAP and BiPAP tubes, sutures, surgical sealants, haemostats, adhesives, suction tubes, etc. Apparel includes drapes, gowns, and gloves. The global surgical disposables market is dominated by catheters and cannulae with 32.2% market share in CY24. The surgical dressings (wound management) market reached US\$ 19.6B in CY24, and is expected to reach US\$ 25.0B by CY29P at a CAGR of 5.0%. The surgical apparels market was valued at US\$ 15.4B in CY24 and is projected to reach US\$ 21.0B by CY29P, growing at a CAGR of 6.4%.

Global surgical disposables market by functionality
(US\$ B, CY19-29P)



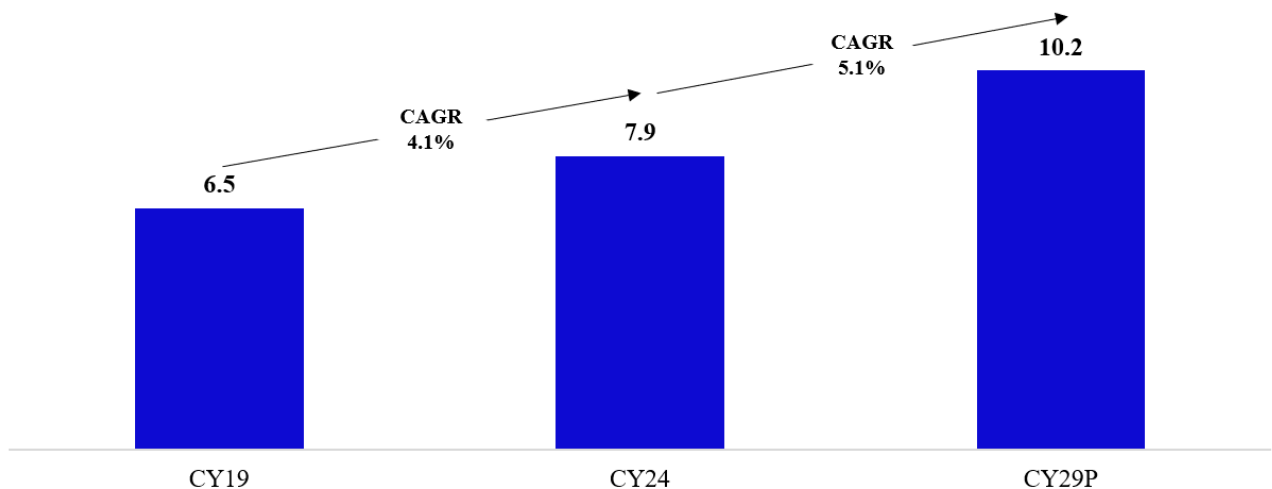
Source(s): 1Lattice analysis



The global surgical disposables market segments by functionality is as follows:

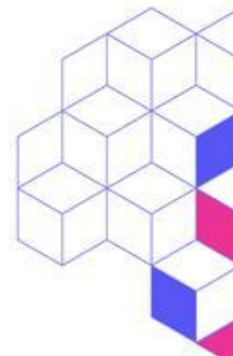
- 1) **Catheters and cannula** dominate the global surgical disposables market with 36.0% of market share in CY24, expected to increase further to 37.6% by CY29P. The surgical catheters and cannula market was valued at US\$ 27.3B in CY19, reached US\$ 39.4B in CY24 at a CAGR of 7.6% from CY19-24. Rising chronic disease burden, expanding critical care capacity, and growing procedure intensity are accelerating demand for catheters and cannulae, establishing them as foundational products within the medical disposables market.
- 2) **Disposable syringes** accounted for 15.9% of the global market in CY24, reaching a share of 16.6% through CY29. The market size is forecasted to rise from US\$ 12.4B in CY19 to US\$ 25.0B in CY29P, growing at a CAGR of 6.6% during CY19-24 and 8.0% over CY24-29P. Rising vaccination coverage, increasing prevalence of chronic diseases requiring frequent injectable therapies, and growth in hospital and home-based care are primary demand drivers for disposable syringes.
- 3) **Wound management** products held a 17.9% share in CY24, projected to increase to 16.6% by CY29P. The segment is expected to grow from US\$ 19.6B in CY24 to US\$ 25.0B in CY29P, growing at a relatively robust CAGR of 5.0%. Rising incidence of chronic wounds driven by diabetes, ageing populations, and increasing surgical procedures is fuelling demand for advanced wound management products
 - **The disposable dressing** market was valued at US\$ 6.5B in CY19 and reached US\$ 7.9B in CY24 at a CAGR of 4.1% from CY19-24 and is further expected to reach at US\$ 10.2B by CY29P at growth rate of 5.1%

**Global disposable dressing market
(US\$ B, CY19-29P)**

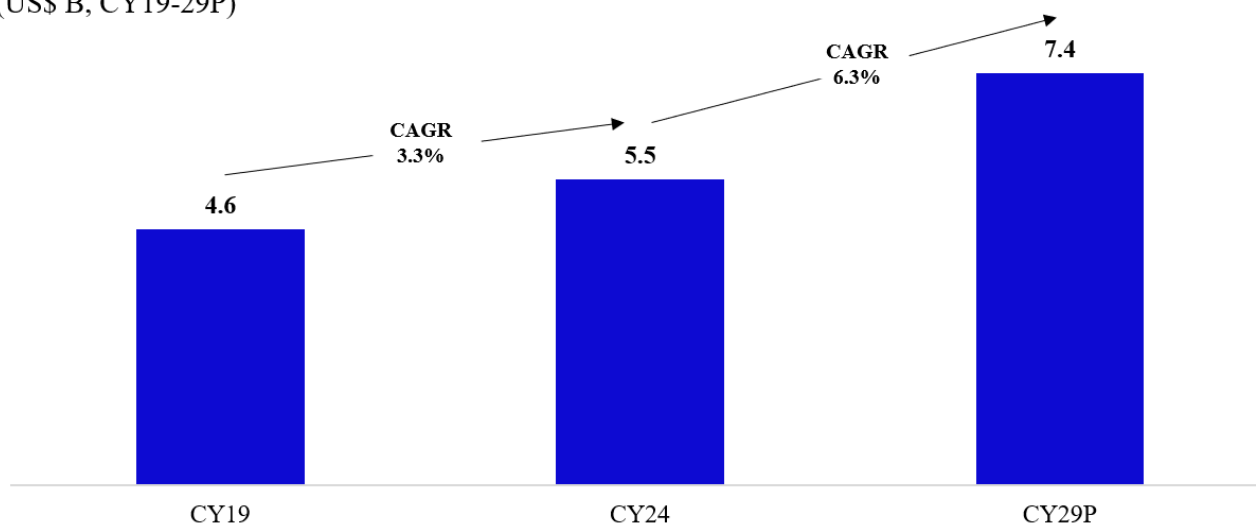


Source(s): 1Lattice analysis

- 4) **Surgical apparels** represented 14.1% of the global market in CY24. The market is set to grow from US\$ 15.4B in CY24 to US\$ 21.0B in CY29P, recording a CAGR of 6.4%. The use of disposable gowns, drapes, and gloves surged during the COVID-19 pandemic, creating higher awareness of infection prevention. Hospitals are increasingly shifting from reusable to single-use apparels, though price competitiveness is a key factor in procurement.
 - **Surgical drapes** were valued at US\$ 4.6B in CY19 and reached US\$ 5.5B in CY24, grown at a CAGR of 3.3% from CY19-24 reaching US\$ 7.4B by CY29P with a CAGR of 6.3%.



Global disposable drapes market (US\$ B, CY19-29P)

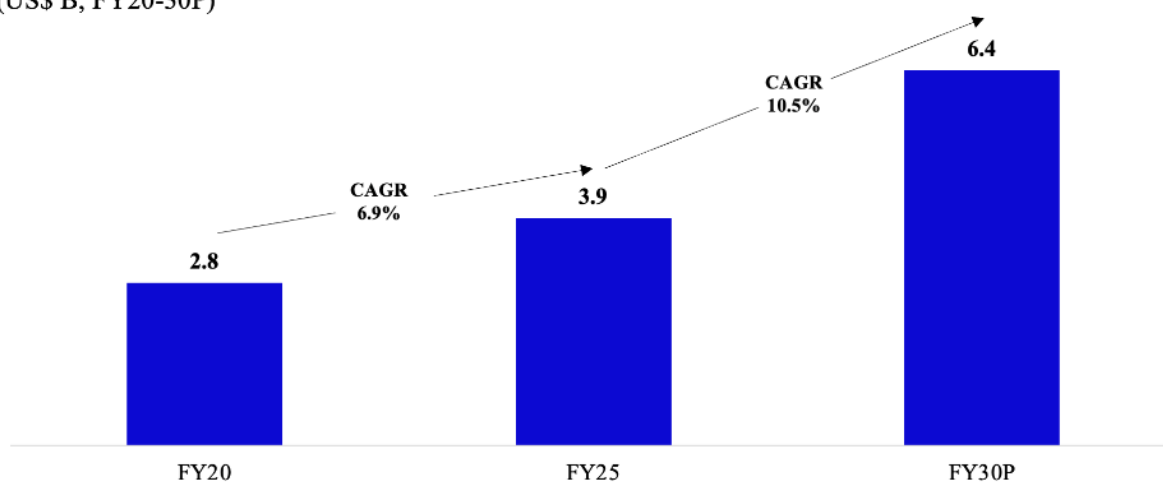


Source(s): 1Lattice analysis

7.3 The Indian surgical disposables market was valued at US\$ 3.9B (INR 327.4B) in FY25 and is expected to grow at a CAGR of 10.5% from FY25–30.

The disposable apparels and wound dressings market in India collectively contributed to approximately 32.7% of the surgical disposables market in FY25. Indian surgical disposables market is driven by expanding healthcare infrastructure, increasing surgical procedure volumes, and growing awareness of infection prevention protocols. The market benefits from government initiatives aimed at improving healthcare access and rising private healthcare investments.

Indian surgical disposables market (US\$ B, FY20-30P)



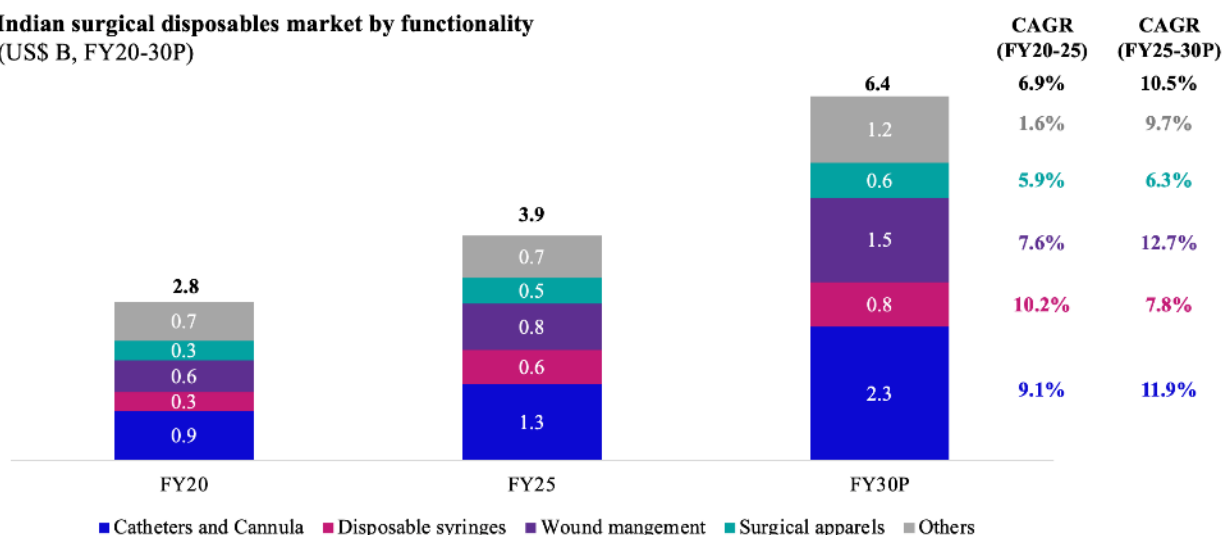
Source(s): 1Lattice analysis

The surgical disposables market has demonstrated steady growth driven by adoption of advanced technologies and materials, procedure specific kits, increasing surgical volumes, growing awareness of infection control protocols, and rising adoption of disposable rather than reusable drapes in healthcare facilities across India. Market performance during FY20-25 was characterised by consistent growth despite pandemic-related disruptions. The COVID-19 pandemic initially created supply chain challenges but subsequently accelerated demand for single-use surgical products, including drapes, as healthcare facilities prioritised infection prevention. Government initiatives to strengthen healthcare infrastructure and the expansion of surgical capacity under programs like Ayushman Bharat provided additional market impetus.



Market dynamics are influenced by India's demographic transition, with an ageing population more susceptible to chronic wounds, and the rising prevalence of lifestyle diseases such as diabetes and cardiovascular conditions. The market structure shows increasing penetration of international standards and products, supported by domestic manufacturing capabilities under the "Make in India" initiative and growing export potential in global markets.

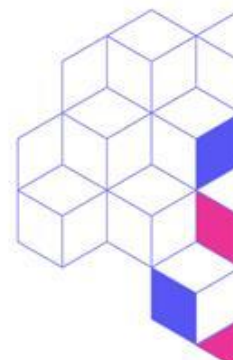
Indian surgical disposables market by functionality
(US\$ B, FY20-30P)



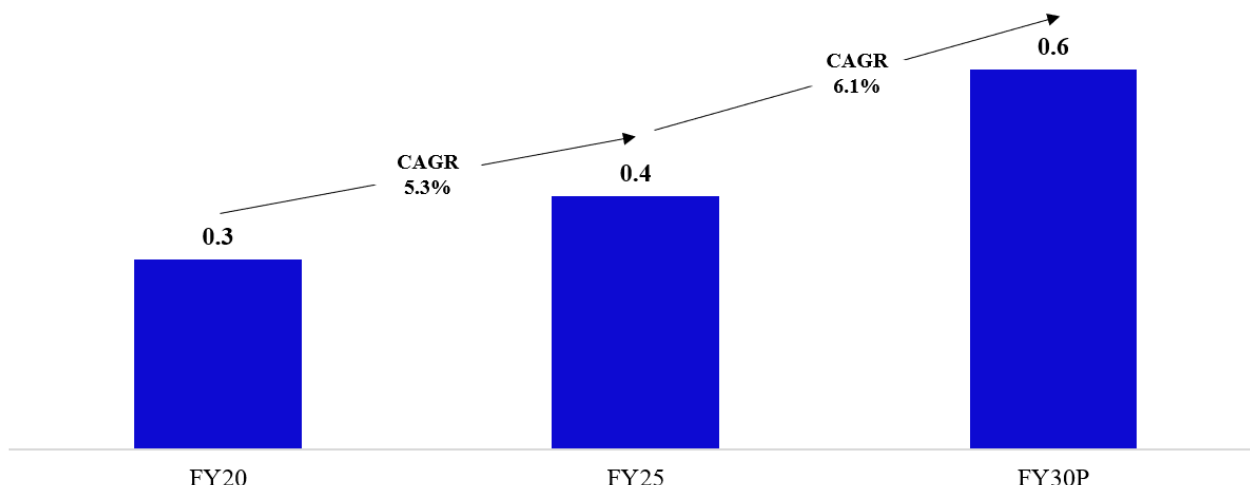
Source(s): 1Lattice analysis

The Indian surgical disposables market segments by functionality is as follows

- Catheters and cannula** dominate the Indian surgical disposables market with 34.4% of market share in FY25, expected to increase further to 36.7% by FY30P. The surgical catheters and cannula market was valued at US\$ 0.9B (INR 63.0B) in FY20, reached US\$ 1.3B (INR 112.7B) in FY25 at a CAGR of 9.1% from FY20-25. Increasing prevalence of chronic diseases and high usage in critical care settings are driving demand, making catheters and cannula the backbone of the disposables industry.
- Disposable syringes** accounted for 13.8% of the Indian market in FY25, maintaining a stable share of 12.2% through 2030. The market size is forecasted to rise from US\$ 0.3B (INR 24.1B) in FY20 to US\$ 0.8B (INR 66.0B) in FY30P, growing at a CAGR of 10.2% during FY20-25 and 7.8% over FY25-30P. In India, the widespread adoption of safety syringes, along with government immunisation drives and focus on preventing needle-stick injuries, has accelerated demand.
- Wound management** products held a 20.9% share in FY25, projected to increase to 23.1% by FY30P. The segment is expected to grow from US\$ 0.8B (INR 68.6B) in FY25 to US\$ 1.5B (INR 125.0B) in FY30P, growing at a relatively robust CAGR of 12.7%. Rising demand for advanced dressings in trauma, diabetic care, and surgical recovery is evident, though cost sensitivity and limited access outside metropolitan areas remain challenges. - **The disposable dressing** market has been growing due to rising rates of traumatic injuries in India, especially from road accidents, industrial incidents and workplace hazards, these factors are driving stronger demand for disposable wound dressings because they offer quick, hygienic, infection-reducing care in emergency and post-acute situations. Hospitals, clinics and first-responders increasingly prefer single-use advanced dressings for their convenience, safety and ability to standardise wound management, boosting the market for disposables dressing across public and private healthcare. The Indian disposable dressing market was valued at US\$ 0.3B in FY20 and reached US\$ 0.4B in FY25 at a growth rate of 5.3% from FY20-25 and is expected to reach US\$ 0.6B at CAGR of 6.1% from FY25-30P.



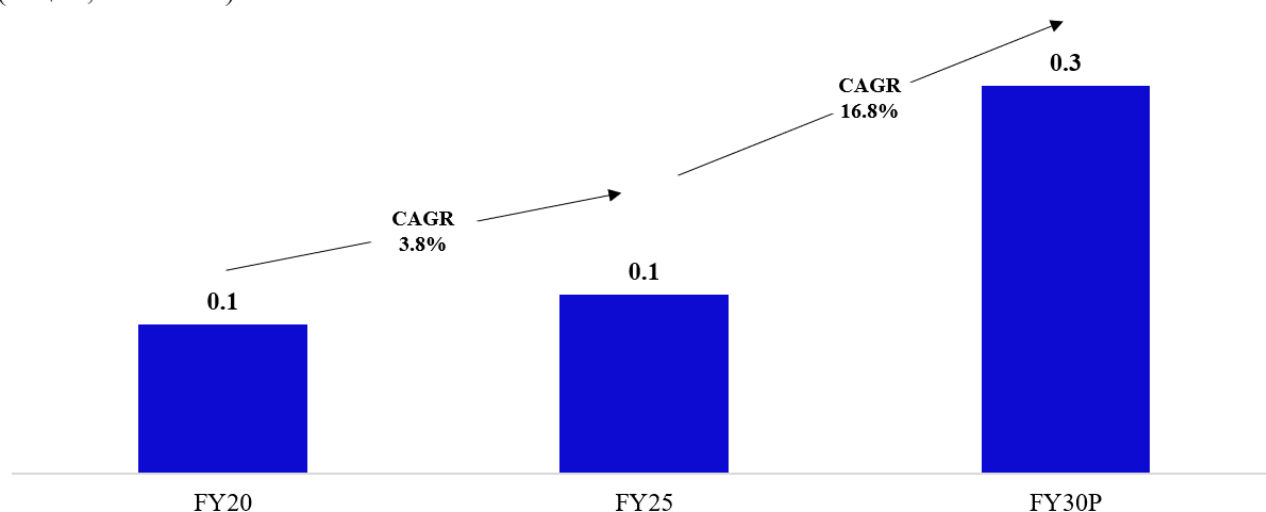
Indian disposable dressings market (US\$ B, FY20-30P)



Source(s): 1Lattice analysis

- 4) **Surgical apparels** represented 11.7% of the Indian market in FY25. The market is set to grow from US\$ 0.5B (INR 42.3B) in FY25 to US\$ 0.6B (INR 50.7B) in FY30P, recording a CAGR of 6.3%. The use of disposable gowns, drapes, and gloves surged during the COVID-19 pandemic, creating higher awareness of infection prevention. Hospitals are increasingly shifting from reusable to single-use apparels, though price competitiveness is a key factor in procurement. - **Surgical drapes** were valued at US\$ 0.1B (INR 7.3B) in FY20 and reached US\$ 0.1B (INR 8.5B) in FY25, grown at a CAGR of 3.8% from FY20-25. This accounts for 26.4% of the total surgical apparels market and 2.6% of the overall surgical disposables market in FY25 in India.

Indian disposable drapes market (US\$ B, FY20-30P)



Source(s): 1Lattice analysis

Commodity-type consumables experience intense competition and pricing pressure, particularly in institutional procurement channels. At the same time, demand is rising due to increasing surgical volumes, hospital expansion, and stronger infection-control and accreditation requirements that favour single-use items. Pandemic-driven shifts toward disposables have further accelerated adoption. Alongside these demand-side forces, advances in low-cost, high-barrier nonwoven materials, improved



local manufacturing and supply chains, and operational benefits such as faster OR turnover and simplified linen logistics are making disposable drapes more practical and affordable, reinforcing their growing use across hospitals.

7.4 Surgical disposables are classified by FDA (Class I–II) and CDSCO (Class A–D) frameworks, based on patient risk, and sterile barrier requirements which determine the level of risk and handling protocols

Manufacturing of surgical disposables must comply with an ISO 13485 aligned quality management system and follow established consensus test standards for gowns, drapes, and protective apparel such as AAMI, ASTM, and EN specifications. Manufacturers must demonstrate validated sterilisation processes and sterile barrier performance and meet packaging requirements as per ISO 11607-1 for terminally sterilised products to ensure product integrity through distribution.

Under the US FDA framework, surgical disposables are grouped by risk into Class I and Class II. Class I covers lower risk items such as non-sterile examination gloves, simple bandages, and some non-sterile apparel. These devices are subject to general controls including registration, complaint handling, and basic quality management practices, and many are exempt from the 510(k)-clearance process.

Class II includes moderate risk disposables where barrier or sterile performance is critical, for example, surgical gowns, sterile drapes, many procedure packs, and certain single-use instruments. These products typically require validated sterilisation and sterile barrier data, performance testing to consensus standards, and biocompatibility evidence, and normally undergo the 510(k) route in the United States.

In India, devices are regulated under the Medical Devices Rules, 2017, with risk classes A through D administered by CDSCO and state authorities. Many sterile disposables such as surgical drapes and gowns are treated as higher risk and are listed in Class B, requiring registration, licensing, and evidence of sterilisation, biocompatibility, and QMS compliance. Lower risk items typically map to Class A and face lighter regulatory controls.

7.5 Competitive players in the India surgical disposables market (domestic and multinational companies)

Multinational players bring global scale, deep R&D and broad, high-technology portfolios with regulatory footprints that make them preferred suppliers for higher-complexity devices and hospital systems. By contrast, domestic players differentiate through localised manufacturing, aggressive cost-competitiveness and a strong presence in public tenders for single-use disposables, advantages that are reflected in hospital procurement lists. This split is evident in a rapidly growing Indian market (double-digit CAGR) where government policy and “Make in India” momentum support the scaling of local capabilities even as multinationals continue to supply advanced technologies and global best practices.

7.5.1 Market structure – domestic vs multinational

The market operates with two layers. The first is the commodity layer, where domestic players supply high-volume and low-cost products such as syringes, IV sets, gloves, and gowns. Competition in this layer is intense and is based mainly on price, scale, and distribution reach, particularly in tier-2 and tier-3 hospitals. The second is the premium layer, where multinational companies and a few certified domestic firms supply advanced categories such as sterile barrier systems, interventional catheters, and specialty drapes. Competition in this layer is limited, and multinational players maintain their position by offering advanced technology, international regulatory approvals, and strong procurement relationships with tertiary care hospitals.

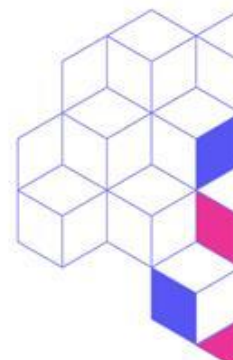
7.5.2 Product portfolio of competitive players

Multinational companies generally offer advanced products including sterile drapes, wound management solutions, vascular catheters, surgical barriers, and safety syringes. Their products are typically used in operating rooms and interventional suites where adherence to international standards and clinical validation is critical.

Domestic companies primarily focus on high-volume consumables such as syringes, cannulae, infusion and transfusion sets, gloves, wound dressings, and procedure kits. Many also act as contract manufacturers or exporters. Over time, some domestic firms have upgraded facilities, obtained certifications, and expanded into specialised product categories such as sterile packs and advanced IV sets.

7.5.3 Business model of key players

The industry follows three main business models. The first is pure-play manufacturing, where domestic companies produce high-volume and cost-sensitive products for hospitals, nursing homes, and government tenders. The second is pure-play distribution, where multinational companies import and distribute globally manufactured products, relying on brand equity, regulatory compliance, and complete product solutions. The third is the hybrid model, which combines local manufacturing



and distribution. This model allows domestic companies to expand into advanced categories through technical collaborations, while multinational companies use it to localize production and align with Make in India incentives.

Industry players commonly follow order-based procurement rather than long-term contracts, limiting visibility on input prices and procurement continuity. As a result, manufacturers are frequently forced to manage operations with short planning horizons and minimal assurance of future order continuity. Fluctuating tender cycles and delays in public procurement processes directly contribute to revenue unpredictability for manufacturers operating in tender-heavy segments

7.5.4 Key entry barriers in the market

The Indian surgical disposables market presents several structural and operational barriers for new entrants. These barriers vary in intensity depending on whether the player intends to compete in commodity segments (standard drapes and dressings) or premium, hospital-centric categories (specialty kits, advanced barrier protection).

- 1) **Regulatory compliance:** Adherence to stringent national and international quality standards, such as ISO and CE certifications, requires continuous investment in compliance, documentation, and audits. Regulatory updates can further complicate market entry for new players.
- 2) **Increasing waste produced:** Rising waste generation from disposable devices is emerging as a key challenge. In addition, inadequate reimbursement for such devices continues to hinder market growth.
- 3) **Raw material dependency:** Fluctuations in raw material prices and dependence on imports for specific components increase production costs, affecting pricing and competitiveness in both domestic and export markets.
- 4) **Established competition** from well-known domestic and multinational companies with strong hospital relationships makes gaining market share difficult.
- 5) **Increased competition** could limit the Company's ability to maintain or increase market share, and result in pricing pressures that adversely affect their profitability.
- 6) **Sustainability concerns:** Increasing global demand for eco-friendly alternatives has been pressuring manufacturers to develop biodegradable or recyclable medical disposables, requiring R&D investments.

8. Global and Indian orthopaedics medical devices market

8.1 Definitions and segmentation of the orthopaedic medical devices market

The orthopaedic medical devices market encompasses medical equipment, surgical implants, surgical disposables, and instruments used for the diagnosis, treatment, and rehabilitation of musculoskeletal disorders, injury, or trauma. This includes solutions for bone fractures, joint degeneration, spinal conditions, trauma, and congenital deformities. These devices are used across hospitals, clinics and specialised orthopaedic centres, aiming to improve patient mobility, reduce pain, and enhance overall quality of life. Both the global and Indian orthopaedic medical-devices markets are experiencing sustained growth, driven by factors such as an ageing population, increasing adoption of joint-replacement surgeries, improving healthcare infrastructure, and increasing lifestyle-related disorders and sports injuries. These trends highlight the sector's dynamic nature and its critical role in improving patient outcomes and quality of life. The market is broadly segmented by functionality, end use and application.

8.1.1 Segmentation of orthopaedic medical devices by functionality

Orthopaedic medical devices are designed to address a variety of musculoskeletal conditions by providing stability, restoring mobility, and promoting tissue regeneration. They can be classified into the following categories based on their function:

- 1) **Medical equipment** in orthopaedics includes imaging, therapeutic, and surgical support devices that aid in diagnosis, treatment, and rehabilitation. These devices, such as X-ray, CT, MRI systems, physiotherapy machines, and surgical tables or robotic platforms, enhance surgical precision, patient monitoring, and post-operative recovery.
- 2) **Surgical implants** are used to replace, repair, or stabilise bones and joints, restoring mobility and functionality. This category includes joint replacement implants (hip, knee, shoulder), trauma fixation devices (plates, screws, nails, external frames), and spinal implants that support fusion, motion preservation, or fracture treatment.
- 3) **Surgical disposables** are single-use items that maintain sterility and ensure patient safety during orthopaedic procedures. They include general consumables such as drapes, gowns, sutures, and staples, as well as orthopaedic-specific items like bone cement, haemostatic agents, and drainage tubes.
- 4) **Orthopaedic instruments** are tools used to perform surgical procedures with accuracy and efficiency. This category includes cutting and drilling tools, fixation instruments, arthroscopy devices, and spinal surgery instruments that assist in precise implant placement, joint repair, and minimally invasive procedures.
- 5) **IVD reagents** support the diagnosis and monitoring of musculoskeletal and metabolic bone conditions. They include assays for bone metabolism markers, infection and inflammation markers, and advanced genetic or biomarker tests that guide treatment and track disease progression.



8.1.2 Segmentation of orthopaedic medical devices by end use

The orthopaedic implants market is segmented by end use, reflecting the different healthcare settings where knee, shoulder, and spine procedures are performed. Each end-use category plays a distinct role in driving adoption and accessibility of advanced orthopaedic solutions.

- 1) **Hospitals** are the largest end-use segment, handling the majority of knee, shoulder, and spinal procedures due to their advanced infrastructure, availability of skilled orthopaedic surgeons, trauma care units, and comprehensive diagnostic facilities. They remain the preferred setting for complex surgeries, emergency interventions, and revision procedures, as well as for offering multidisciplinary care and structured post-operative rehabilitation.
- 2) **Specialty clinics** focus primarily on elective orthopaedic surgeries, catering to patients who prefer personalised treatment and shorter waiting times. These centres often specialise in joint replacement or spine surgeries, enabling more customised care, advanced pain management protocols, and targeted rehabilitation programs that improve patient outcomes.
- 3) **Ambulatory surgical centres (ASCs)** are gaining traction for orthopaedic implants, especially for minimally invasive knee, shoulder, and spine procedures. With lower costs, quicker turnaround times, and reduced hospital stays, ASCs are increasingly preferred for same-day surgeries, reflecting the global trend toward outpatient orthopaedic care.
- 4) **Others** include rehabilitation centres and research institutes that support post-surgical recovery and innovation in implant technologies. While not major surgical hubs, they play a critical role in improving functional outcomes, advancing clinical data, and supporting long-term patient management in the orthopaedic ecosystem.

8.1.3 Segmentation of orthopaedic implants by application

The orthopaedic medical devices market serves a wide range of clinical applications, addressing conditions that affect bones, joints, and the musculoskeletal system. Orthopaedic devices are used for trauma management, degenerative joint diseases, spinal disorders, and sports-related injuries, helping restore function, reduce pain, and support rehabilitation.

- 1) **Joint reconstruction and replacement devices** are one of the largest and most established application segments, including surgical instruments, navigation systems, and supporting equipment used in hip, knee, shoulder, and ankle procedures. These devices facilitate joint replacement surgeries, improve procedural accuracy, and enhance patient outcomes for conditions such as osteoarthritis and rheumatoid arthritis.
- 2) **Spinal medical devices** include surgical instruments, fixation systems, navigation tools, and imaging equipment designed to assist in spine stabilisation, deformity correction, and fusion procedures. They are widely applied in scoliosis, degenerative disc disease, spinal fractures, and trauma cases requiring precise surgical intervention.
- 3) **Trauma-related devices** include external fixators, orthopaedic drills, plates, screws, and other surgical support equipment used for fracture management. These devices are essential in accident and emergency care, enabling effective bone stabilisation, fixation, and healing after high-impact injuries.
- 4) **Surgical support and bone repair devices** such as bone cements, bone graft substitutes, and specialised surgical kits support fracture repair, bone void filling, and procedural stability. They enhance the effectiveness of surgical procedures and improve post-operative recovery.
- 5) **Sports medicine and arthroscopy devices** include arthroscopes, shavers, anchors, screws, and fixation instruments used for minimally invasive procedures, ligament reconstruction, and tendon repair. These devices are critical for treating sports-related injuries and supporting faster patient rehabilitation.
- 6) **Orthobiologic support devices** include equipment for preparing and delivering stem cells, platelet-rich plasma (PRP), and growth factors during orthopaedic procedures. They are increasingly used in combination with conventional devices to accelerate healing, enhance surgical outcomes, and reduce recovery times.

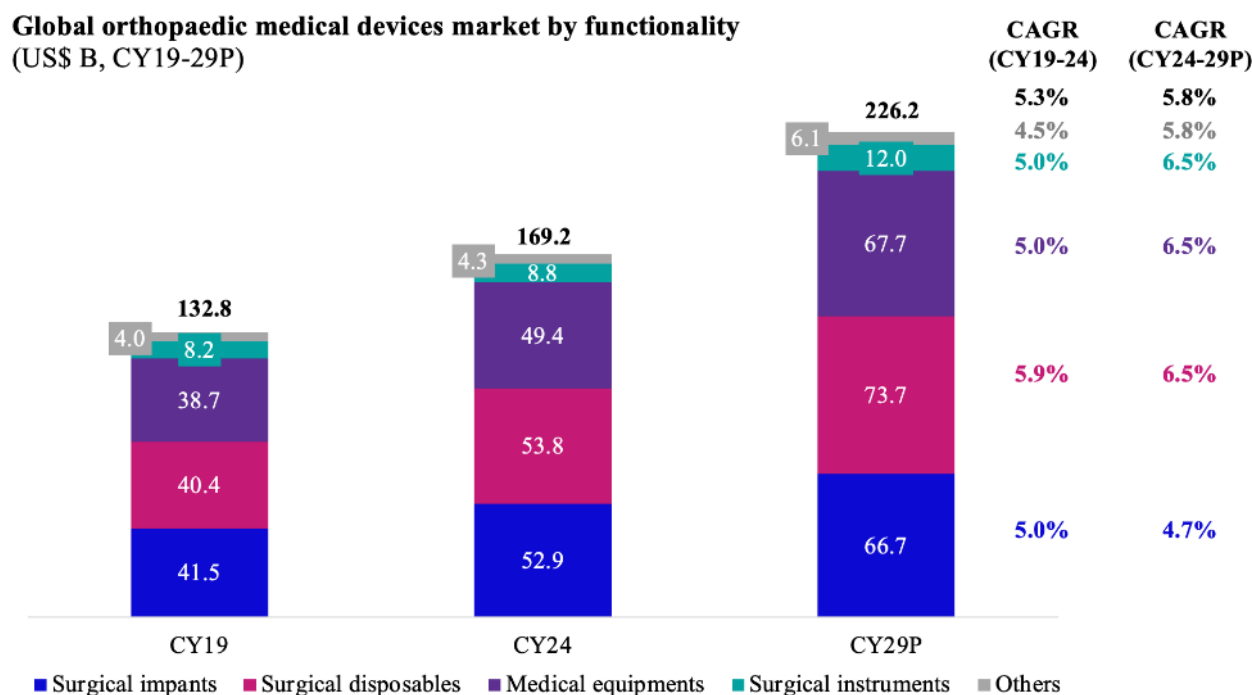
8.2 The global orthopaedic medical-devices market was valued at US\$ 169.2B (INR 14.3T) in CY24 and is expected to reach US\$ 262.2B (INR 22.2T) by CY29P, growing at a CAGR of 5.8%

The global orthopaedic medical-devices market was valued at US\$ 169.2B (INR 14.3T) in CY24 and is expected to reach US\$ 262.2B (INR 22.2T) by CY29P, growing at a CAGR of 5.8%. Demand for orthopaedic and surgical implants is expected to grow, an expanding geriatric population, and an increasing incidence of trauma and musculoskeletal disorders, which continue to drive demand for orthopaedic and surgical implants. Within this market, surgical implants are expected to reach US\$ 66.7B (INR 5.6T) by CY29P, growing at a CAGR of 4.7%, driven by rising joint replacements and advanced implant adoption. Surgical disposables are projected at US\$ 73.7B (INR 6.2T) by CY29P, expanding at a CAGR of 6.5%, supported by infection control, single-use adoption, and increasing surgical volumes. The medical equipment segment is estimated at US\$ 67.7B (INR 5.7T) by CY29P, growing at 6.5% CAGR, reflecting infrastructure expansion and uptake of advanced diagnostic technologies. Surgical instruments are set to reach US\$ 12.0B (INR 1.0T) by CY29P with a CAGR of 6.5%, fuelled by demand for minimally



invasive procedures and trauma care. Finally, the ‘others’ segment, including IVD reagents, is expected to hit US\$ 6.1B (INR 515.8B) by CY29P, growing at a CAGR of 5.8%, highlighting niche opportunities in specialised consumables and reagents.

Global orthopaedic medical devices market by functionality
(US\$ B, CY19-29P)

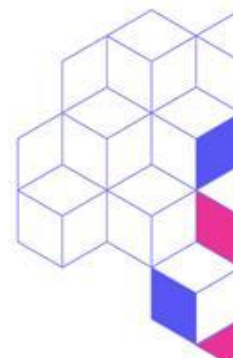


8.3 The Indian orthopaedic medical-devices market was valued at US\$ 6.2B (INR 524.3B) in FY25, is projected to reach US\$ 10.7B (INR 904.8B) by FY30P, growing at a CAGR of 11.4%

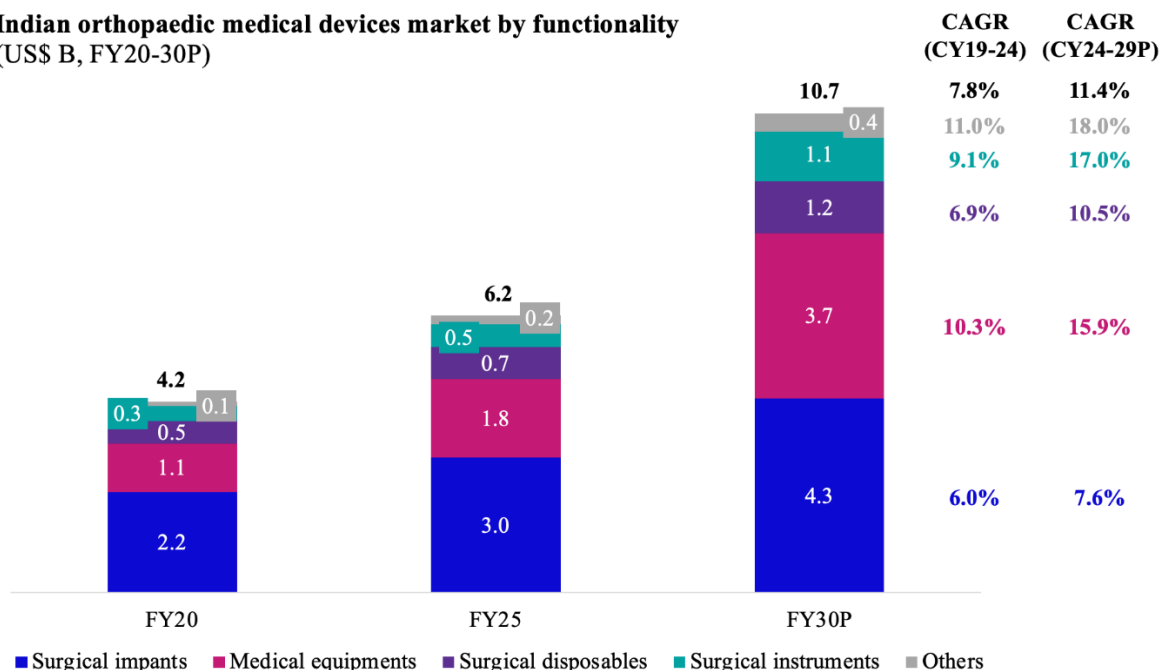
The Indian orthopaedic medical-devices market was valued at US\$ 6.2B (INR 524.3B) in FY25, is projected to reach US\$ 10.7B (INR 904.8B) by FY30P, growing at a CAGR of 11.4%. Growth momentum is strong across all key segments, with surgical implants reaching US\$ 4.3B (INR 363.6B) by FY30P at 7.6% CAGR, driven by rising joint replacement demand, an ageing population, and adoption of advanced implant technologies. Medical equipment is expected to reach US\$ 3.7B (INR 312.9B) by FY30P at 15.9% CAGR, fuelled by hospital infrastructure expansion, technological adoption, and growing diagnostics demand. The expansion of the healthcare sector is further driven by rising demand for quality medical services, an increasing incidence of chronic diseases, and government initiatives such as the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) and the Ayushman Bharat Health and Wellness Centres (Ayushman Arogya Mandirs). In addition, increased investment in hospital and healthcare infrastructure capacity has improved access to healthcare and affordability.

Surgical disposables are expected to grow to US\$ 1.2B (INR 101.5B) by FY30P at 10.5% CAGR, supported by heightened infection-control focus, increasing surgical volumes, and a shift toward single-use products. Surgical instruments are projected at US\$ 1.1B (INR 93.0B) by FY30P with a 17.0% CAGR, reflecting rising trauma cases, minimally invasive procedures, and procedure-specific innovations. The ‘Others’ segment, including IVD reagents and niche consumables, is set to grow to US\$ 0.4B (INR 33.8B) by FY30P at 18.0% CAGR, highlighting emerging opportunities in specialised areas.

Furthermore, India is also emerging as a competitive manufacturing base for exports in the orthopaedic and medical-devices segment supported by cost-efficient labour, established technical capabilities, and access to key raw materials such as medical-grade titanium, stainless steel, cobalt-chromium alloys, PEEK, and UHMWPE, which help reduce dependence on imports. Intellectual property such as patents, design registrations, trademarks, manufacturing know-how, and proprietary formulations plays a central role in differentiating medical devices and establishing competitive advantage. Maintaining trade-secret protection for proprietary processes and materials remains a key challenge in the sector.



Indian orthopaedic medical devices market by functionality
(US\$ B, FY20-30P)



Source(s): 1Lattice analysis

8.4 Regulatory framework and compliance requirements for Class I and II orthopaedic implants

India's regulatory framework for orthopaedic medical devices is governed by the Central Drugs Standard Control Organisation (CDSCO) under the Medical Devices Rules (MDR), 2017, which introduced a structured, risk-based classification system to ensure product safety, efficacy, and quality. Devices are classified into Class A (low risk), Class B (moderate risk), Class C (high risk), and Class D (very high risk), aligning with international frameworks such as the US FDA and EU MDR.

Orthopaedic implants and instruments falling under Class A and B (comparable to Class I and II internationally) primarily include non-invasive and moderate-risk devices such as orthopaedic braces, surgical tools, powered instruments, arthroscopy sets, and external fixators. These are regulated through mandatory device registration, ISO 13485 certification, adherence to Good Manufacturing Practices (GMP), and compliance with labelling and performance standards. Manufacturers of medical and implantable devices must adhere to rigorous biocompatibility, sterility, mechanical performance, and safety testing frameworks under CDSCO, ISO 13485, EU MDR, US FDA, and other applicable global standards. Manufacturers and importers must obtain manufacturing or import licences via the CDSCO's SUGAM portal, ensuring transparency, regulatory oversight, and product traceability. Industry participants face long and documentation-heavy approval timelines, high testing costs, and challenges relating to protocol design and sample availability.

The framework enables a streamlined approval pathway for low- and moderate-risk orthopaedic devices, promoting domestic manufacturing while maintaining high patient safety standards. In contrast, higher-risk implants, including spinal fixation systems, joint reconstruction implants, and advanced orthopaedic prosthetics, are classified under Class C/D and require clinical evidence, pre-market evaluation, and post-market surveillance under the Materiovigilance Programme of India (MvPI).

A medical device licence is mandatory to manufacture, import, sell, or distribute orthopaedic implants in India, applicable to Class B, C, and D devices. Compliance with CDSCO regulations ensures conformity to safety and performance benchmarks, while ISO 13485 defines the requisite quality management system (QMS) for manufacturers. The certification also supports regulatory documentation, including Form MD-7 submissions, and reinforces traceability and post-market vigilance, even when not explicitly mandated. Global regulators are increasingly tightening post-market requirements, resulting in more frequent enforcement actions and recall interventions across the industry.

8.5 Orthopaedic medical devices market portfolio

The orthopaedic product portfolio encompasses a comprehensive range of solutions designed to address musculoskeletal conditions. These products support procedures such as fracture repair, joint reconstruction, spinal stabilisation, and sports-



related interventions, improving surgical outcomes, patient safety, and procedural efficiency. The portfolio includes bone grafts, implants, surgical instruments, disposables, and supporting accessories.

- 1) **Bone grafting solutions** such as are used in fracture G-Bone modified hydroxyapatite, synthetic hydroxyapatite, and G-graft hydroxyapatite with Collagen repair, spinal fusion, and joint reconstruction. These grafts act as substitutes for natural bone, promoting regeneration and providing structural support. Their biocompatibility, osteoconductive properties, and ease of handling enhance healing and reduce the risk of graft rejection.
- 2) **Surgical implants** range includes joint prostheses (hip, knee, shoulder, and ankle), spinal cages, rods, plates, and screws. These implants restore function, stabilise bones and joints, and facilitate long-term recovery. Designed for anatomical conformity, they allow precise, patient-specific interventions, improving procedural accuracy and clinical outcomes.
- 3) **Surgical instruments** cover intramedullary nails, locking plates, curved plates, multi-hole plates, and specialised arthroscopy instruments. These tools enable precise fracture fixation, spinal stabilisation, and minimally invasive procedures. Their versatile design supports a wide range of clinical applications, enhancing both surgical accuracy and patient safety.
- 4) **Surgical disposables and drapes** such as knee o drape, hip u drape, shoulder u drape, lamino spinal drapes, and arthroscopy drapes, along with accessories like g-dress, soft adhesive tapes, surgical mops, and protective gowns, maintain a sterile surgical field. These products reduce infection risk, improve procedural efficiency, and safeguard both patients and surgical teams.
- 5) **Surgical consumables** include products such as G-Dress, G-Plast Soft Tape, surgical mops, head and eye shields, and viral barrier gowns, which support sterility, infection control, and procedural efficiency. Their specialised design, ease of handling, and protective functionality ensure safe dressing application, maintain a sterile environment, and safeguard both patients and surgical teams.

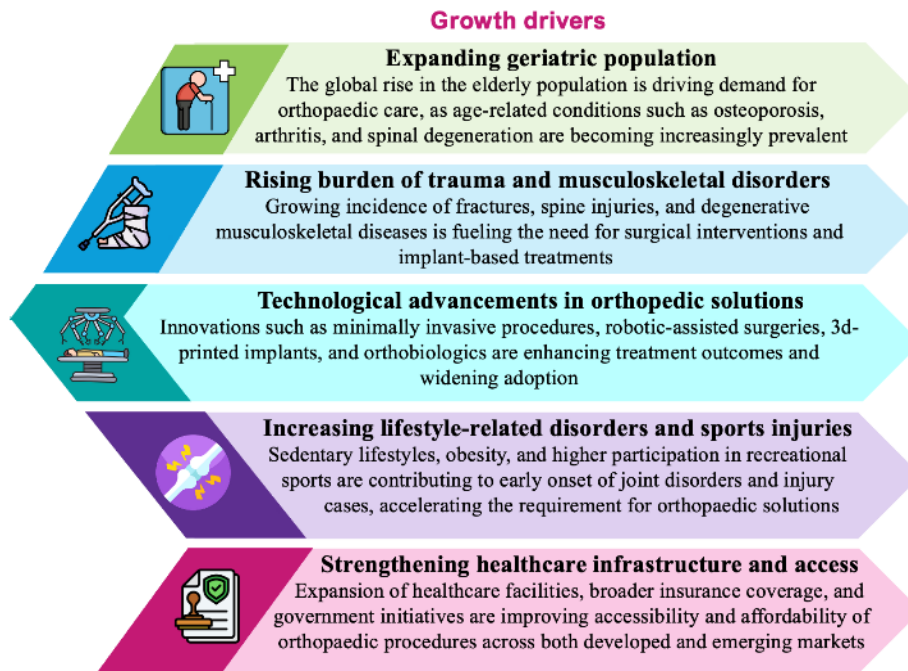
8.5.1 Key differentiators in the orthopaedic medical devices market in India.

The orthopaedic market is characterised by products and solutions that not only address clinical needs but also enhance surgical efficiency, safety, and adaptability. Key differentiators highlight the factors that set leading offerings apart, ranging from proven clinical efficacy and procedural support to innovations in materials and design.

Key differentiators	Description
Clinical efficacy	Bone grafts and anatomically designed implants support bone regeneration, structural stability, and improved surgical outcomes
Procedure support	Modular instruments, pre-cut drapes, and fixation devices simplify procedures and enhance surgical accuracy
Sterility and infection control	Disposable drapes, protective gowns, and accessories ensure a sterile surgical environment and reduce infection risk
Product versatility	Instruments and drapes designed for multiple procedures (e.g., bilateral or minimally invasive surgeries) improve adaptability in various clinical settings
Material and design innovation	Advanced materials (e.g., hydroxyapatite with collagen, ergonomic implants) and thoughtful design features enhance performance, usability, and reliability

8.6 Key growth drivers in the orthopaedic medical devices market in India

The growth of the orthopaedic medical devices market is driven by a combination of demographic trends, rising disease prevalence, technological advancements, and improvements in healthcare infrastructure. Increasing patient awareness, coupled with a preference for minimally invasive procedures, is accelerating the adoption of advanced orthopaedic solutions. Furthermore, strategic investments by leading players in research and development, as well as in supply chain and distribution networks, are expanding market reach and enhancing accessibility. Collectively, these factors shape product innovation, influence market expansion, and guide the evolution in orthopaedic care.



8.7 The surgical disposables market is evolving under the combined influence of patient safety priorities and the need for operational efficiency.

The surgical disposables market is evolving rapidly, driven by the need to enhance patient safety, improve operational efficiency, and reduce environmental impact. Rising adoption of advanced materials and innovative designs is leading to safer, lighter, and more sustainable products. Hospitals and surgical centers are increasingly prioritising disposables that streamline procedures, minimise infection risk, and support sustainability goals. Overall, the market is shifting toward solutions that balance clinical performance with efficiency and environmental responsibility, indicating that future growth will favor products that meet these combined requirements.

8.7.1 New innovations and trends in the orthopaedic surgical disposables market

The orthopaedic surgical disposables market is growing rapidly due to increasing orthopaedic surgical volumes, heightened infection-control priorities, and rising demand for safer single-use products. Innovations in disposables are enhancing surgical precision, patient safety, and workflow efficiency, particularly in orthopaedic procedures. Key trends in the market include the following.

- 1) **Procedure specific disposable kits for orthopaedics** are pre-assembled kits designed for procedures such as joint replacement, spinal surgeries, and trauma management. They streamline operating room preparation, reduce setup time, and improve procedural consistency while minimising errors.
- 2) **Minimally invasive orthopaedic disposables** include instruments, drapes, and kits designed for arthroscopic, small-incision, and MIS procedures. They enable greater surgical precision and faster patient recovery in orthopaedic interventions.
- 3) **Advanced sterile drapes and gowns for orthopaedic use** provide superior barrier protection and fluid resistance during procedures involving bones, joints, and soft tissues. They enhance infection control and maintain a sterile surgical environment.
- 4) **Integration of antimicrobial and smart coatings in orthopaedic disposables** helps prevent infections in procedures involving implants, bone grafts, or open fractures, with some smart coatings releasing antimicrobial agents only when contamination is detected.
- 5) **Enhanced operational efficiency in orthopaedic surgery** is achieved through modular and pre-packaged disposables, reducing instrument handling, 'OR' setup time, and procedural complexity, allowing for higher surgical throughput and consistent patient outcomes.

8.8 Competitive players in the Indian orthopaedic medical devices market (domestic and multinational companies)

Globally, the orthopaedic market is dominated by high-tech, premium solution providers in the implant and disposables segments. Multinational players such as Johnson & Johnson (DePuy Synthes), Stryker, and Smith & Nephew specialise in joint



reconstruction, trauma care, spine surgery, and minimally invasive procedures. They also offer disposables and consumables, serving medium to premium hospitals with advanced surgical solutions. Companies like Mölnlycke Health Care and Halyard provide high-quality surgical consumables including gloves, drapes, and other single-use products. International markets are witnessing a growing preference for bundled surgical kits and multi-category offerings, particularly among smaller hospitals and regional healthcare distributors, and whether such integrated procurement trends are relevant to the export markets targeted by the company. These global players leverage strong R&D, brand recognition, and distribution networks to complement domestic offerings while fostering innovation, technology adoption, and higher standards of patient care in the Indian orthopaedic sector.

The Indian orthopaedic market is driven by key domestic and multinational players focused on quality, innovation, and accessibility. G. Surgiwear Limited contributes significantly to the ecosystem through its range of surgical disposables such as gloves, drapes, gowns, and procedure-specific kits, along with synthetic bone grafts like G-Bone Modified Hydroxyapatite Granules and G-Bone Blocks used in bone regeneration and trauma care. The company's R&D capabilities have enabled it to become the first Indian manufacturer to develop and produce ZTA-based ceramic balls in CY22, which is a high-strength material used in total hip replacement surgeries.

Polymed Biopharmaceuticals develops crystalline compounds that act as FLT3 and IRAK-4 inhibitors, supporting treatments for cancer, autoimmune, cardiovascular, and neurological disorders. Meril Life Sciences offers advanced orthopaedic implants including the Freedom Total Knee Replacement System and Latitud Hip Replacement System, alongside a wide range of trauma and spine products distributed across 50+ countries. Biorad Medisys manufactures innovative and affordable medical devices across urology, gastroenterology, interventional radiology, and orthopaedics, including the Indus Knee prosthesis. Romsons is a major producer and exporter of disposable medical and surgical devices with a broad portfolio covering urology care, anaesthesia, transfusion, respiratory, cardiac, and patient care products supplied to over 65 countries.

Building on these trends, G. Surgiwear Limited intends to explore opportunities to offer integrated product solutions in select export geographies through their well-established distribution network, thereby expanding their reach and enhancing brand visibility in overseas markets. Collectively, these initiatives could position them as a full-range hospital-solutions provider capable of addressing a broad spectrum of clinical needs through a single, reliable supply source.

8.8.1 Product portfolio of competitive players

G. Surgiwear Limited has built a strong orthopaedic portfolio centred on implants, bone grafting products, and surgical instruments, reflecting its position as one of India's leading medical device manufacturers. Its offerings include Hydroxyapatite-based bone grafting materials, trauma plates, and orthopaedic pliers, with recent investments expanding into knee and hip implant lines, showcasing a growing focus on advanced reconstructive solutions. The company manufactures several products that fall under stricter regulatory classifications (Class C and Class D) under the framework of CDSCO. These classes are subject to more stringent regulatory scrutiny, including clinical evaluation requirements and risk-based audits, as compared to Class A and Class B devices. Additionally, G. Surgiwear Limited's in-house R&D centre located within its manufacturing facility has been registered with and recognized by the DSIR for the purpose of availing customs duty exemption, underscoring its in-house R&D capabilities, regulatory compliance, and eligibility for applicable government incentives. The company's manufacturing facility is strategically located in Shahjahanpur, Uttar Pradesh, offering proximity to urban centres in the state such as Lucknow and Kanpur, as well as the Delhi NCR region. The region offers a favourable ecosystem for medical-device and precision manufacturing activities, supported by a growing industrial base, access to component suppliers and skilled labour, and strong connectivity through national highways and rail networks.

Complementing this, Romsons Group of Industries addresses the rehabilitation and recovery side of orthopaedics through its Ortho Care range featuring supports, braces, belts, and splints such as lumbar and sacral belts, cervical collars, ankle and knee supports, and clavicle braces.

Multinational corporations such as DePuy Synthes (Johnson & Johnson), Stryker Corporation, and Smith & Nephew bring global expertise to the Indian market. DePuy Synthes (Johnson & Johnson) offers a wide portfolio including joint reconstruction implants (hip, knee, shoulder), trauma devices, spinal implants, craniomaxillofacial solutions, and disposables for surgical procedures. Stryker Corporation provides orthopaedic and neuro implants, such as joint replacement systems, trauma and extremities solutions, spine devices, and surgical instruments, with a strong emphasis on innovation and advanced technologies. Smith & Nephew delivers orthopaedic implants, sports medicine devices, wound management products, and surgical disposables, focusing on improving patient outcomes through quality and innovation. In the disposables segment, companies



like Mölnlycke Health Care, and Halyard supply high-quality consumables including surgical gloves, dressings, drapes, and other single-use hospital supplies, complementing the implant-focused portfolios of the other multinational players.

8.8.2 Key entry barriers in the market

The orthopaedic market is highly competitive and technologically advanced, which creates several barriers for new entrants. These barriers span financial, regulatory, operational, and clinical domains, making it challenging for newcomers to establish a foothold and compete with established domestic and multinational players.

- 1) **High capital requirement** is a major obstacle, as setting up advanced manufacturing facilities for implants, prosthetics, and surgical instruments demands substantial upfront investment. This creates a significant financial burden for new entrants seeking to establish themselves in the industry.
- 2) **Stringent regulatory compliance** further slows down market entry, since obtaining approvals from authorities such as the DCGI in India, the FDA in the United States, or the CE mark in Europe is both complex and time intensive. These rigorous requirements increase costs and extend timelines for product launches.
- 3) **Strong brand loyalty and established networks** also pose challenges, as hospitals and surgeons typically prefer suppliers with proven track records. This entrenched loyalty, combined with long-standing supplier relationships, makes it difficult for new players to gain traction.
- 4) **Advanced R&D and intellectual property** form another barrier, with the development of innovative orthopaedic devices requiring extensive research and technological expertise. Patents and intellectual property protections further safeguard incumbents, restricting opportunities for new entrants.
- 5) **Robust distribution and service infrastructure** is critical in this industry, as timely delivery, surgical training, and post-sale service are essential, particularly for high-value implants. Companies with established networks and support systems therefore hold a strong competitive advantage.
- 6) **Clinical evidence and surgeon trust** are equally important, since new products must demonstrate safety, efficacy, and reliability through clinical trials and long-term studies. Without this evidence, adoption remains limited regardless of product innovation.
- 7) **Skilled workforce requirement** completes the picture, as the design, production, surgical support, and maintenance of sophisticated devices demand highly specialised personnel. Attrition of skilled workers to larger device clusters and multinational hubs is an increasingly common industry issue. A shortage of such expertise can significantly hinder the entry and growth of new players in the sector.
- 8) **Reliance on contract labour** for routine manufacturing operations introduces compliance challenges and operational continuity risks. Industry players often face shortages of certified technical personnel, especially in non-metro locations, contributing to higher wage costs and training burdens.

In addition to these structural barriers, the medical devices and implants also demands customer validation and approvals, expectation from customers for process innovation and cost reduction, high quality standards and stringent specifications. G. Surgiwear Limited's ability to offer integrated solutions to the customers meeting their varying requirements such as product reliability, user friendliness, consistent quality, and cost-effective products, differentiates it from its competitors. The company's diversified portfolio enables it to serve a broad spectrum of clinical and procedural requirements across the healthcare sector, both in India and international markets.

9 Business models in the Indian medical devices market

The medical devices sector typically operates through a multi-tier distribution ecosystem involving regional distributors and merchant exporters who often maintain product registrations and market permissions. This involves regional distributors and merchant exporters who often maintain product registrations and market permissions. The core business models are based on the type of role and activities ongoing in the value chain of a company. Broadly, these include pure-play distribution, pure-play manufacturing, and hybrid models with equal distribution and manufacturing. Each model has its own features, benefits, and competitive dynamics, and their relevance often depends on device category, investment intensity, and policy environment.

1) Pure-play distribution

This model is where companies act only as intermediaries, importing and distributing medical devices from other manufacturers without engaging in production. The focus is on building wide hospital networks, ensuring quick market access, and offering product variety through multiple brands.

2) Hybrid model (distribution and manufacturing)

This approach combines manufacturing some products locally with distributing others from global or domestic manufacturers. It blends cost efficiency with technology access, reduces dependency on imports, and allows companies to diversify portfolios while building stronger bargaining power with hospitals and healthcare providers.

3) Pure-play manufacturing



Many manufacturers rely on in-house R&D, licensing and collaborations to build and protect their intellectual property portfolios.. It requires heavy investment in R&D, technology, and compliance but provides full control over quality, costs, and intellectual property, while also aligning with government incentives like Make in India and PLI schemes.

9.1 Features and benefits of business models

The Indian medical devices market follows diverse business models that shape how products are developed, manufactured, and delivered to healthcare providers. Industry participants frequently face distributor-related risks such as uneven sales performance, payment delays, churn and challenges in managing inventory levels across fragmented domestic and export channels. Additionally, replacement of distributors can be operationally complex and time-consuming, especially in markets where regulatory approvals and registrations are held in the distributor's name. Core business models are described below:

Pure-play distribution involves importing and distributing devices from global or domestic manufacturers without engaging in production. It requires low capital investment, enables rapid market entry, and offers access to a wide product portfolio. The competitive strength of this model lies in established distributor networks, hospital relationships, and speed to market. However, it faces sustained margin pressure, dependence on suppliers, and limited scope for differentiation.

Hybrid model (distribution and manufacturing) combines importing and distributing advanced devices with selective local production, either in-house or through contract manufacturers. This approach balances global technology access with local cost efficiency, enables portfolio diversification, and provides resilience against policy changes such as localisation mandates or higher import duties. Although operationally more complex, it improves supply security, strengthens brand presence, and enhances bargaining power with hospitals and healthcare networks.

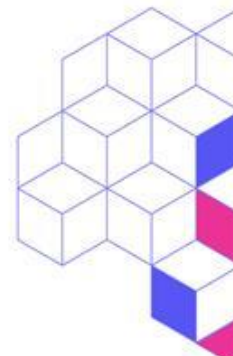
Pure-play manufacturing focuses on in-house R&D, design, and production of devices, with sales handled directly or via distributors. While it requires significant upfront investment and a longer credibility-building period, this model offers full control over product quality, cost, and intellectual property. It aligns closely with government initiatives such as the PLI scheme and Make in India, reduces import dependence, and unlocks export potential. Over time, it builds strong brand equity and delivers higher margins, especially where companies can sell directly to hospitals.

9.2 Among these three business models, the hybrid model emerges as the most suitable one for the Indian medical devices market, as it balances global technology access with local cost advantages

India's healthcare ecosystem is highly price-sensitive yet demand for advanced and specialised devices is rising steadily. Supplier markets for critical inputs are concentrated, exposing manufacturers to sudden price escalations and supply-chain risks. While pure-play distribution enables quick market entry with low capital investment, it suffers from margin pressure, supplier dependency, and limited differentiation. Conversely, pure-play manufacturing provides stronger control over quality, branding, and margins but requires significant upfront investment, longer gestation periods, and carries higher regulatory and compliance risks.

The hybrid model mitigates these challenges by combining selective in-house or contract manufacturing with the distribution of advanced global products. This approach enables portfolio diversification, improves supply security, and provides flexibility to adapt to localisation mandates or rising import duties. Importantly, hospitals increasingly prefer partners that can serve as one-stop solution providers, offering both proprietary and distributed devices. This strengthens the bargaining power of hybrid players, improves customer stickiness, and enhances resilience against pricing pressures and policy shifts.

For instance, G. Surgiwear Limited has successfully adopted a hybrid model, integrating in-house manufacturing with product distribution. This strategy allows the company to maintain control over quality in its proprietary products while expanding its portfolio and market reach through distributed devices. The model reduces dependence on a single revenue stream, supports stronger brand recognition, and ensures adaptability in a competitive and evolving market. Compared to companies relying solely on imports or only on local manufacturing, G. Surgiwear Limited's hybrid strategy provides greater scalability, operational flexibility, and a more sustainable competitive position.



Aspect	Pure-play distribution	Hybrid (distribution and manufacturing)	Pure-play manufacturing
Focus	Importing & distributing global/domestic devices without local production	Mix of distribution and selective in-house/contract manufacturing	In-house R&D, design, and full-scale local production
Capital Investment	Low (no factories or R&D needed)	Medium (factories + distribution operations)	High (factories, R&D, regulatory compliance)
Speed of Market Entry	Fast, due to ready product access	Moderate distribution quick, manufacturing takes time	Slow, since it requires R&D, factory setup, regulatory approvals, and product development before market launch
Portfolio	Wide, multi-brand; dependent on manufacturers	Balanced global tech access + local cost advantage	Narrow initially, but highly specialized and innovative
Profit Margins	Lower, due to principal dependence and margin pressure	Better margins from own manufacturing, stable revenue from distribution	Potentially highest (if direct distribution is managed)
Differentiation	Limited; mainly network & service-driven	Stronger brand presence; flexibility in operations	Strongest; based on innovation, IP, and quality
Risks / Challenges	Margin pressure, high dependence on suppliers, limited brand control	Operational complexity, balancing dual models	High upfront costs, long gestation, regulatory hurdles
Strengths	Distributor networks, hospital access, relationships with KOLs	Flexibility, adaptability, bargaining power, resilience to policy changes	Self-reliance, government alignment (PLI, Make in India), export potential

10 Peer benchmarking

India's medical devices and surgical consumables manufacturing industry is at a growth inflection point. While global majors such as Stryker, Smith & Nephew, and Boston Scientific continue to dominate the global market with advanced portfolios across implants, wound care, equipment and surgical accessories, India's manufacturing ecosystem remains in a developing phase. The domestic market is still fragmented and import-dependent for high-end surgical and implantable products, though this reliance is gradually declining as local capabilities expand under government initiatives such as Make in India and the PLI Scheme for medical devices. Product-mix variations across categories significantly impact profitability for industry participants.

Further, the medical devices and equipment manufacturing sector in Uttar Pradesh is actively promoted by the state government through targeted policy initiatives. While 100% foreign direct investment (FDI) under the automatic route for medical device manufacturing is permitted at the national level, the Government of Uttar Pradesh complements this framework through its Pharmaceutical & Medical Device Industry Policy, which provides a range of state-level incentives to manufacturers. These include a 15% capital subsidy (up to INR 200 Cr); an interest subsidy of 5% p.a. for five years on plant, machinery, and infrastructure loans; 100% exemption from stamp duty and electricity duty for 10 years; support for waste management infrastructure and common utilities; reimbursement of domestic and international patent filing costs; financial assistance for R&D and clinical trials; support for contract and sponsored research; and subsidies for ISO and BIS quality certifications. Collectively, these measures position Uttar Pradesh as an attractive destination for pharmaceutical and medical device manufacturing and further strengthen the strategic advantages of G. Surgiwear Limited's manufacturing presence in Shahjahanpur, Uttar Pradesh.

Apart from added advantages with medical device policy, G. Surgiwear Limited has a strong presence across India with a network of 554 distributors and 36 super-stockists spread across 23 states and union territories, as of September 30, 2025. In addition to its domestic distribution network, the Company exports its products to more than 30 countries, including markets in Africa and South Asia, through a network of 58 distributors.



G. Surgiwear Limited's distribution channels

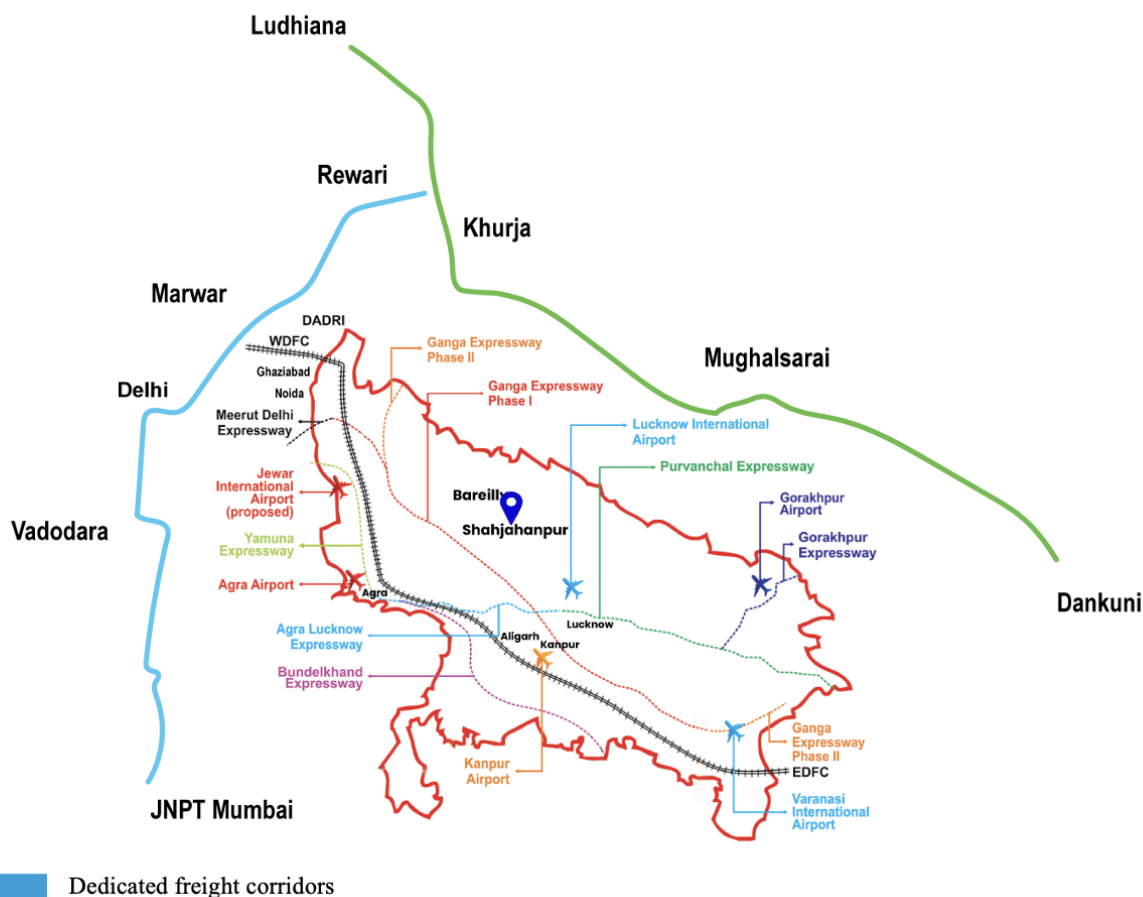


Note(s): *Including Chandigarh (11)

The map above illustrates the strategic positioning of G. Surgiwear Limited's manufacturing facility relative to neighbouring cities, industrial hubs, logistics corridors, and rail networks, underpinning the company's distributor presence across India.

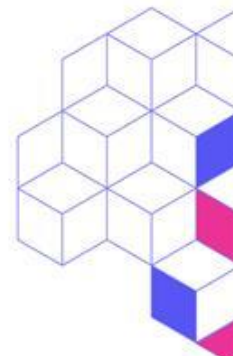


Logistics around G. Surgiwear Limited's manufacturing facility in Shahjahanpur, UP, India



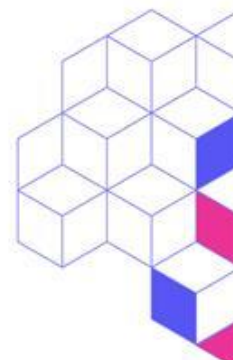
Within this evolving landscape, G. Surgiwear Limited is among the few Indian manufacturers with end-to-end in-house capabilities spanning design, moulding, assembly, sterilisation, and packaging, compliant with global standards ISO certifications including ISO 13485: 2016 (Quality Management System for Medical Devices) and ISO 9001:2015 Quality Management System, ISO 10002:2018 (Customer Satisfaction and Complaint Management System) and CE Mark. The company's operations cover a broad product spectrum, including surgical products such as disposable drapes and dressings, as well as medical implantable devices such as hydrocephalus shunts and orthopaedic implants, among others, catering to multiple specialties such as neurosurgery, ophthalmic, orthopaedics, gastrointestinal, and wound care. This diversified product base enables the company to serve both routine and complex surgical requirements across hospitals and distributors, while contributing to the gradual reduction of import dependency in critical device categories. G. Surgiwear Limited's manufacturing facility is designed to ensure quality control, cost competitiveness, and scalability, key differentiators in a sector historically reliant on imported devices. The company supplies to private hospitals, public healthcare institutions, and distributors, and participates in government procurement channels such as the Government e-Marketplace (GeM) through their network of distributors and super-stockists. It also maintains a growing export presence across more than 40 countries including in South Asia, Africa, Middle East Asia and South America.

G. Surgiwear Limited is an manufacturer of surgical consumables, implants, instruments, and disposable medical devices across specialties such as neurosurgery, orthopaedics, and general surgery. With in-house design, moulding, and sterilisation facilities and certifications including ISO 13485, CE Mark, and WFNS compliance, it delivers globally compliant products to private, public, and international healthcare markets, reinforcing India's self-reliance in medical device manufacturing. For the year ended March 31, 2025, G. Surgiwear Limited has a market share of 21.87% in the hydrocephalus shunt segment in terms of revenue.



Global players:

Parameters		stryker	SmithNephew	Boston Scientific	Mölnlycke	Owens & Minor
Company profile	Headquarter	United States	United Kingdom	United States	Sweden	United States
	Incorporation year	1941	1907	1979	1849	1926
	Status of public listing	Yes	Yes	Yes	No, parent company 'Investor AB' is listed on NASDAQ	Yes
	Geographic presence	• 75 countries	• ~100 countries	• 127 countries	• 100 countries	• 80 countries
Business metrics	Product offerings	• Disposables & Consumables: Skin closure products, Pressure injury prevention disposables, etc. • Implants: Joint replacement implants (Knee, Hip, Shoulder, Elbow), etc. • Instrument: Ultrasonic scalpels, EP catheters, Cystoscopes, etc. • Equipment: Cranial navigation systems, Cranial access, etc.	• Disposables & Consumables: Hemostasis wand, Single-use negative pressure wound therapy system, etc. • Implants: Bioinductive implant, Total knee arthroplasty implants, etc. • Instruments: Tympanostomy system, Coblation system for adenotonsillectomy, etc.	• Disposables & Consumables: Balloon catheters (Dilation, Drug-coated), Guidewires, Cytology, Snares, Sphincterotomes, etc. • Implants: Cardiac devices (CRT devices, Pacemakers), etc. • Instruments: Access devices (Dilatation, Sheath), etc. • Equipment: Radiofrequency ablation systems, CTO systems, etc.	• Disposables & Consumables: Wound dressings (alginate and fibre dressings, aperture drapes, Operating room sheets, gloves, etc. • Instruments: Patient warming system, etc.	• Disposables & Consumables: Wound dressings (foams, alginates, gelling fibres), masks, etc. • Instruments: Patient warming systems, utility scissors, vaginal specula, etc. • Equipment: Exam tables, fetal monitoring systems, medical carts, etc. • Other Services: 3PL services, customer-owned inventory management, etc.
	Distribution network	NA	NA	• 11K suppliers	• 17K suppliers	• 1K suppliers
	Certifications	• ISO 13485: Ensures quality management systems for safe and effective medical device manufacturing • IEC 62304: International standard defining safe development and lifecycle management of medical device software • ISO 45001: Ensures workplace health and safety • ISO 14001: Manages and ensures environmental impact and sustainability	• ISO 13485: Ensures quality management systems for safe and effective medical device manufacturing • ISO 9001: Ensures consistent quality management and operational efficiency across global processes	• ISO 13485: Ensures quality management systems for safe and effective medical device manufacturing • ISO 9001: Ensures consistent quality management and operational efficiency across global processes • ISO 50001: Improves energy efficiency and management • ISO 45001: Ensures workplace health and safety • ISO 14001: Manages and ensures environmental impact and sustainability	• ISO 13485: Ensures quality management systems for safe and effective medical device manufacturing • ISO 9001: Ensures consistent quality management and operational efficiency across global processes • ISO 14001: Manages and ensures environmental impact and sustainability • ISO 45001: Ensures workplace health and safety	• ISO 13485: Ensures quality management systems for safe and effective medical device manufacturing • ISO 9001: Ensures consistent quality management and operational efficiency across global processes • ISO 14001: Manages and ensures environmental impact and sustainability
	# Patents	• 14,200	NA	NA	NA	• 140 patents in USA • 600 patent outside US

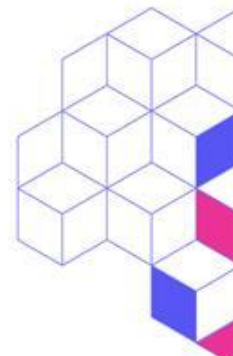


Operational metrics	Regulatory approvals					
		• USFDA - Regulates the safety, effectiveness, and quality of medical devices marketed in the United States • CDSCO - Regulates the approval, manufacturing, and import of medical devices and drugs in India, ensuring product safety, quality, and efficacy • 510(k) - An FDA clearance process that confirms a medical device is substantially equivalent to an existing approved device • CE Mark - Certification indicating that a medical device meets EU MDR standards and can be marketed within the European Union	• USFDA - Regulates the safety, effectiveness, and quality of medical devices marketed in the United States • CDSCO - Regulates the approval, manufacturing, and import of medical devices and drugs in India, ensuring product safety, quality, and efficacy • 510(k) - An FDA clearance process that confirms a medical device is substantially equivalent to an existing approved device • CE Mark - Certification indicating that a medical device meets EU MDR standards and can be marketed within the European Union	• USFDA - Regulates the safety, effectiveness, and quality of medical devices marketed in the United States • CDSCO - Regulates the approval, manufacturing, and import of medical devices and drugs in India, ensuring product safety, quality, and efficacy • 510(k) - An FDA clearance process that confirms a medical device is substantially equivalent to an existing approved device • CE Mark - Certification indicating that a medical device meets EU MDR standards and can be marketed within the European Union	• USFDA - Regulates the safety, effectiveness, and quality of medical devices marketed in the United States • 510(k) - An FDA clearance process that confirms a medical device is substantially equivalent to an existing approved device • CE Mark - Certification indicating that a medical device meets EU MDR standards and can be marketed within the European Union • ISCC - Certifies sustainable sourcing and carbon reduction practices • FSC - Ensures responsible and sustainable forest management	• USFDA - Regulates the safety, effectiveness, and quality of medical devices marketed in the United States • CDSCO - Regulates the approval, manufacturing, and import of medical devices and drugs in India, ensuring product safety, quality, and efficacy • 510(k) - An FDA clearance process that confirms a medical device is substantially equivalent to an existing approved device • CE Mark - Certification indicating that a medical device meets EU MDR standards and can be marketed within the European Union



Indian players:

Parameters						
Company profile	Headquarter	India	India	India	India	India
	Incorporation year	1982	1995	1952	2006	1999
	Status of public listing	No	Yes	No	No	No
	Geographic presence	• 40 countries	• 125+ countries	• 80+ countries	• 150+ countries	NA
Business metrics	Product offerings	• Disposables & Consumables: Craniotomy drapes, microscope drapes, shunt drapes, neuro patties, orthopedic drapes (hip, shoulder, knee, arthroscopy), eye drapes, and caesarian drapes, gowns, viral barrier kits, and gauze pads, etc. • Implants: Hydrocephalus shunt systems, bone grafting products, G-patch, synthetic, with collagen), synthetic testis,, and burn mesh (G-Mesh), etc. • Instruments: Cranial fixation system instruments, multi-hole straight plates, burr hole covers, and UEM splints, etc.	• Disposables & Consumables: I.V. cannulas, blood control I.V. : Needle-free connectors, safety needles, filters, etc. • Implants: Implantable ports, central, peritoneal dialysis catheters, etc. • Instruments: Yankauer suction sets, infusion, and minor surgical tools, etc. • Equipment: Nebulizer compressor systems, ventilator circuits,, etc.	• Disposables: Infusion and transfusion disposables (IV sets, blood administration sets, extension lines, catheters, and basic patient aids (wheelchairs, walkers, walking sticks, hot/cold packs), etc.	• Consumables: PVA nasal packing, Sutures, absorbable haemostats, skin adhesives, test kits (malaria, HIV), IUT devices, surgical dressings, etc. • Implants: Heart valves, stents, occludes, intracoronary shunts, joint replacements, fixation screws, etc. • Equipment: Surgical robotic systems, joint replacement robots, soft tissue robots, etc.	• Disposables: Access sheaths, irrigation and suction sets, drainage catheters,, retrieval baskets, etc. • Implants: Adjustable loop fixation implants, suture anchors joint replacement systems (knee and hip), femoral stems, acetabular liners, etc. • Instruments: Arthroscopes, Chol angioscopes, endoscopic ultrasound devices, and visualization instruments, etc. • Equipment: Robotic joint replacement systems, endoscopic imaging and treatment systems, etc.
	Distribution network	• 612 distributors	• 900+ distributors	• 1,500+ distributors	NA	NA
	Certifications	• ISO 13485: 2016 - Quality Management System for Medical Devices • ISO 9001:2015 - Quality Management System • ISO 10002:2018 Customer Satisfaction and Complaint Management System	• ISO 9001:2015 - Standard for quality management systems, ensures consistent product/service quality • ISO 13485 - Ensures quality management systems for safe and effective medical device manufacturing	• ISO 13458 - Ensures quality management systems for safe and effective medical device manufacturing • ISO 11135 - Standard for validating and controlling ethylene oxide sterilization of medical devices to ensure safety and sterility	• ISO 13485: Ensures quality management systems for safe and effective medical device manufacturing • ISO 14001: Manages and ensures environmental impact and sustainability • ISO 45001: Ensures workplace health and safety • OHSAS 18001 - standard for managing workplace health and safety to prevent accidents, injuries, and occupational hazards	



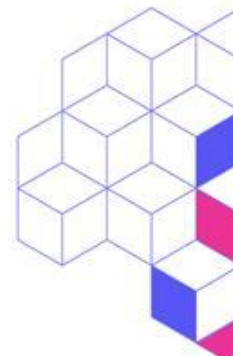
Operational metrics	# Patents	• 31	• 334	NA	• 500+	NA
	Regulatory approvals (CDSCO, CE, USFDA, etc.)	- CE Mark - Certification indicating that a medical device meets EU MDR standards and can be marketed within the European Union - WFNS Compliant - conforms to the safety, quality, and performance guidelines recommended by the World Federation of Neurosurgical Societies for neurosurgical devices	- USFDA - Regulates the safety, effectiveness, and quality of medical devices marketed in the United States - CDSCO - Regulates the approval, manufacturing, and import of medical devices and drugs in India, ensuring product safety, quality, and efficacy 510(k) - An FDA clearance process that confirms a medical device is substantially equivalent to an existing approved device - CE Mark - Certification indicating that a medical device meets EU MDR standards and can be marketed within the European Union	- USFDA - Regulates the safety, effectiveness, and quality of medical devices marketed in the United States - CDSCO - Regulates the approval, manufacturing, and import of medical devices and drugs in India, ensuring product safety, quality, and efficacy 510(k) - An FDA clearance process that confirms a medical device is substantially equivalent to an existing approved device - CE Mark - Certification indicating that a medical device meets EU MDR standards and can be marketed within the European Union	- USFDA - Regulates the safety, effectiveness, and quality of medical devices marketed in the United States - CDSCO - Regulates the approval, manufacturing, and import of medical devices and drugs in India, ensuring product safety, quality, and efficacy 510(k) - An FDA clearance process that confirms a medical device is substantially equivalent to an existing approved device - CE Mark - Certification indicating that a medical device meets EU MDR standards and can be marketed within the European Union	- USFDA - Regulates the safety, effectiveness, and quality of medical devices marketed in the United States - CDSCO - Regulates the approval, manufacturing, and import of medical devices and drugs in India, ensuring product safety, quality, and efficacy 510(k) - An FDA clearance process that confirms a medical device is substantially equivalent to an existing approved device - CE Mark - Certification indicating that a medical device meets EU MDR standards and can be marketed within the European Union

10.1. Financial benchmarking

In Fiscal 2025, G. Surgiwear Limited's revenue from operations was 2,239.76 million which was the highest among their peers in India. In Fiscal 2025, the company's EBITDA Margin was 44.19%, which was the highest among their peers in India. EBITDA Margin indicates the proportion of revenue that translates into EBITDA, reflecting operational efficiency and profitability before the impact of finance costs, taxes, depreciation & amortization and other income.

- In Fiscal 2025, the company's PAT margin was 25.77% which was highest among the peers in India.
- In Fiscal 2025, the company's ROE was 30.30%, which was highest among the peers in India.
- In Fiscal 2025, the company's ROCE was 29.66%, which was second highest among the peers in India.

Parameters	Company	FY23	FY24	FY25	Q1FY26
Revenue from Operations (INR M)	G. Surgiwear Limited	1,509.48	1,687.36	2,239.76	446.13
	Stryker Corporation	15,60,047.44	17,33,310.88	19,10,633.20	4,96,028.96
	Smith & Nephew plc	4,40,980.40	4,69,223.44	4,91,293.60	1,18,975.92
	Boston Scientific Corporation	10,72,389.92	12,04,134.40	14,16,126.32	3,94,303.28
	Mölnlycke Health Care AB	1,87,503.74	1,97,331.87	2,11,766.28	NA
	Owens & Minor, Inc.	8,41,834.97	8,73,840.25	9,04,866.67	2,22,565.98
	Romsons Group of Industries	8,264.64	8,621.18	NA	NA
	Meril Life	8,069.80	12,016.40	NA	NA
	Polymed Medical Devices	11,152.30	13,757.96	16,698.32	4,032.11
	Biorad Medisys	2,294.00	3,386.40	NA	NA
EBITDA Margin (%)	G. Surgiwear Limited	26.52%	32.43%	44.19%	32.03%
	Stryker Corporation	16.01%	22.93%	20.10%	17.66%
	Smith & Nephew plc	14.38%	14.42%	16.28%	0.00%
	Boston Scientific Corporation	21.66%	24.20%	23.03%	25.99%
	Mölnlycke Health Care AB	22.37%	26.81%	24.14%	NA
	Owens & Minor, Inc.	3.70%	3.78%	0.48%	2.28%
	Romsons Group of Industries	24.30%	26.76%	NA	NA
	Meril Life	39.36%	25.92%	NA	NA
	Polymed Medical Devices	23.80%	26.00%	27.12%	26.32%
	Biorad Medisys	26.11%	31.50%	NA	NA



PAT Margin (%)	G. Surgiwear Limited	8.95%	13.30%	25.77%	12.56%
	Stryker Corporation	12.78%	15.44%	13.25%	11.15%
	Smith & Nephew plc	4.26%	4.71%	7.06%	0.00%
	Boston Scientific Corporation	5.50%	11.18%	11.02%	14.41%
	Mölnlycke Health Care AB	15.27%	20.44%	18.12%	NA
	Owens & Minor, Inc.	0.22%	-0.40%	-3.39%	-0.95%
	Romsons Group of Industries	13.73%	16.00%	NA	NA
	Meril Life	25.85%	15.06%	NA	NA
	Polymed Medical Devices	15.57%	18.00%	19.25%	20.92%
	Biorad Medisys	13.76%	15.46%	NA	NA
ROE (%)	G. Surgiwear Limited	12.21%	16.90%	30.30%	11.37%
	Stryker Corporation	14.19%	17.02%	14.51%	12.50%
	Smith & Nephew plc	4.24%	5.04%	7.83%	NA
	Boston Scientific Corporation	3.97%	8.15%	8.39%	NA
	Mölnlycke Health Care AB	14.10%	21.17%	NA	NA
	Owens & Minor, Inc.	2.37%	-4.47%	-64.17%	17.50%
	Romsons Group of Industries	21.12%	20.50%	NA	NA
	Meril Life	40.90%	26.03%	NA	NA
	Polymed Medical Devices	14.44%	17.57%	12.24%	NA
	Biorad Medisys	28.53%	32.25%	NA	NA
ROCE (%)	G. Surgiwear Limited	16.34%	17.90%	29.66%	12.46%
	Stryker Corporation	23.92%	12.84%	11.42%	8.63%
	Smith & Nephew plc	1.68%	1.34%	3.78%	NA
	Boston Scientific Corporation	6.30%	8.10%	8.15%	NA
	Mölnlycke Health Care AB	19.03%	28.49%	-715.18%	NA
	Owens & Minor, Inc.	3.89%	3.44%	-8.04%	-0.18%
	Romsons Group of Industries	22.53%	24.61%	NA	NA
	Meril Life	38.90%	23.29%	NA	NA
	Polymed Medical Devices	15.08%	18.08%	12.62%	NA
	Biorad Medisys	16.63%	22.25%	NA	NA

Note(s):

1. Revenue from operations means revenue from sale of products and other operating income
2. EBITDA is calculated as the sum of Restated Profit/(loss) after tax, total tax expense, finance cost, and depreciation and amortization expense and exceptional items, minus other income; In case of Stryker Corporation, Smith & Nephew plc, Boston Scientific Corporation, Mölnlycke Health Care AB and Owens & Minor, Inc. Net income / earnings is considered instead of restated profit/(loss) after tax
3. EBITDA margin is calculated as EBITDA divided by Revenue from operations
4. PAT margin is calculated as Restated Profit/(loss) after tax divided by Total Income; In case of Stryker Corporation, Smith & Nephew plc, Boston Scientific Corporation, Mölnlycke Health Care AB and Owens & Minor, Inc. Net income / earnings is considered instead of restated profit/(loss) after tax
5. Return on Equity is calculated by dividing the Restated Profit/(loss) after tax before other comprehensive income by the total equity attributable to owners of the Company; In case of Stryker Corporation, Smith & Nephew plc, Boston Scientific Corporation, Mölnlycke Health Care AB and Owens & Minor, Inc. Net income / earnings is considered instead of restated profit/(loss) after tax before other comprehensive income
6. Return on capital employed is calculated as Restated Earning before Interest and Tax divided by capital employed. Capital employed is calculated as sum of total equity, total borrowings, minus cash and cash equivalents.
7. For Stryker Corporation, Smith & Nephew plc, Boston Scientific Corporation, Mölnlycke Health Care AB and Owens & Minor, Inc. CY22, CY23, CY24, Q1CY25 have been considered as FY23, FY24, FY25, Q1FY26 respectively

Key challenges and threats to G. Surgiwear Limited:



While G. Surgiwear Limited continues to grow through expansion of its product portfolio and geographic reach, it faces a set of structural challenges and competitive threats such as

- The prices of titanium, cobalt, stainless steel, and other critical materials, which constitute the primary raw materials for manufacturing their products, have historically been sensitive to fluctuations in global metal and commodity markets. As these materials are critical for surgical implant manufacturing, changes in their market prices directly affect the raw material costs.
- The Indian implant market comprises multinational companies offering technologically advanced implants supported by strong R&D and global supply chains, alongside domestic manufacturers that focus on cost-effective products distributed through regional networks.
- The market remains fragmented and continues to be import-dependent for several high-end surgical and implantable products. These competitive dynamics may limit their ability to maintain or grow market share and could lead to pricing pressures that adversely affect their profitability.



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