INDIA MEDTECH HANDBOOK 2024

From Innovation to Expansion Charting the Rise of India's MedTech Ecosystem

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Acknowledgement

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EXECUTIVE SUMMARY

The Indian medical technology (MedTech) industry has emerged as a key sector within the country's broader healthcare ecosystem. Valued at approximately US$ 11 billion, the industry is growing at a rapid pace, driven by advancements in technology, rising healthcare demands, and government initiatives promoting 'Make in India' and medical device innovation. With a projected annual growth rate of 15-17%, India is poised to become one of the largest MedTech markets in the world by 2030.

The Indian MedTech market spans diverse segments, including diagnostic imaging, consumables, patient aids, and orthopedic devices. Diagnostic imaging and patient aids are among the fastest-growing sectors, reflecting a shift toward preventive healthcare and home-based care. While the sector shows tremendous potential, it faces challenges such as regulatory hurdles, fragmented supply chains, limited research infrastructure, and a dependence on imports for high-end technologies. Strengthening local R&D, regulatory frameworks, and skill development will be critical for sustained growth.

The Indian MedTech industry is set to benefit from increased foreign direct investment (FDI), innovation in digital health technologies, and collaborations between industry and academia. India's potential to become a global manufacturing hub for medical devices is supported by favorable policies and a growing talent pool. Strategic investments in research, innovation, and ecosystem development will be crucial in positioning India as a leader in the global MedTech landscape. The industry is on a transformative trajectory, blending innovation, accessibility, and affordability to reshape healthcare delivery. By leveraging these strengths and addressing key challenges, India can become a global MedTech powerhouse, improving health outcomes and driving economic growth.

This report provides an in-depth analysis of the industry, outlining its current landscape, growth trajectory, challenges, and future potential. It aims to equip investors, industry leaders, policymakers, and healthcare professionals with the necessary insights to navigate the evolving Indian MedTech landscape. It emphasizes the sector's potential to become a global hub for medical device manufacturing and innovation, while also highlighting the steps required to overcome challenges and unlock future growth.

The publishers would like to thank researchers, and contributors who have brought this report to fruition. May this report inspire dialogue, cultivate collaboration, and ultimately contribute to the advancement of medical science and technology for the betterment of humanity.

INTRODUCTION

All Set For The Big Leap

India's medical technology (MedTech) industry stands on the cusp of a remarkable transformation, driven by relentless innovation, an expanding domestic market, and growing recognition of the country's potential as a global hub for affordable and advanced healthcare solutions. Over the past decade, India has emerged as a vibrant center for MedTech innovation, where startups and established companies alike are harnessing cutting-edge technologies to address critical healthcare challenges, both locally and internationally. The industry, currently valued at approximately US $11 billion, is poised to witness exponential growth, with projections suggesting it could reach US $50 billion by 2030.

As healthcare systems around the world grapple with rising costs, aging populations, and the increasing burden of chronic diseases, the demand for cost-effective, scalable, and technologically advanced medical solutions is at an all-time high. India, with its unique blend of affordability, a vast talent pool, and an entrepreneurial spirit, is ideally positioned to meet this demand. From telemedicine platforms that bring healthcare to remote villages to advanced diagnostic devices that revolutionize disease detection, the Indian MedTech industry is reshaping the landscape of global healthcare.

The Indian medtech market is among top 20 markets globally in terms of market size. In Asia, it is 4th after China, Japan and South Korea. The Indian medical device market has been identified as a sunrise sector by the Government of India (GOI). The medtech sector in India was worth USD 10 bn in 2014 and is growing at 12% compound annual growth rate (CAGR). In contrast, the global medtech market is growing annually at the rate of 4.1%. The medical device sector was valued at USD11 billion in 2022 and is anticipated to reach USD50 billion by 2030 at a CAGR of 16.4%. India is the fastest growing medical devices market amongst the

emerging markets. The medical devices industry in India consists of large multinationals as well as small and medium enterprises (SMEs) growing at an unprecedented scale. The current market size of the medical devices industry in India is estimated at $11 Bn.

As the Indian MedTech industry continues its trajectory of innovation and expansion, it is poised to play an increasingly influential role in shaping the future of global healthcare. With its unique combination of technological expertise, cost-efficiency, and a rapidly growing domestic market, India is well-positioned to become a leading hub for MedTech innovation. By continuing to foster an environment of innovation, collaboration, and regulatory support, India's MedTech sector has the potential to not only revolutionize healthcare delivery within the country but also address global healthcare challenges on a broader scale.

As part of the global medical device sector, India accounted for 1.5 per cent of the market share in 2020. India's medical device market share in the global market is predicted to be 1.65%. India produces medical devices valued at roughly $7.6 billion; $3.4 billion goes outside, and $4.2 billion stays in the country. But, imports make $7.6 billion of India's $11.8 billion annual demand for medical products. In this way, foreign companies provide 65% of the market's demand while domestic ones supply just 35%.

With the opening of 13 greenfield medical device manufacturing facilities, India is expected to establish itself as a leading exporter of medical devices. The export of medical devices sector has been growing at a CAGR of 9-11% over the last 5 years. More than 60% of domestically manufactured goods are exported. In FY22, India's medical device exports were Rs. 19, 803 crore (US$2.40 billion). Medical equipment exports totaled Rs. 20,511 crore (US$ 2.49 billion) between April and December 2022 and are predicted to reach $10 billion by 2025. 15%- Market Growth Rate (expected), 6,000 + - Types of Medical Devices in India and 10%- The market share to increase to 10-12% over the next 25 years. There are 750-800 domestic medical devices manufacturers in India, accounting for 65% of the market. The start-up ecosystem in India's medical devices sector is diverse and vibrant, with 250+ organizations engaged in innovations for addressing important health issues.

The projected revenue in the Medical Technology market in India is expected to reach US$8.71bn in 2024. The largest market in India is Medical Devices, with a projected market volume of US$7.00bn in 2024. It is anticipated that the revenue will exhibit an annual growth rate (CAGR 2024-2029) of 7.61%, resulting in a market volume of US$12.57bn by 2029.

- Projected Market Size: $50 Billion by 2030
- Ranks as Asia's Fourth Largest MedTech Market
- Fastest-growing amongst the emerging markets
- Recognized as a Sunrise Sector in 2014's 'Make in India' Campaign

THE RISING GIANT

Heading Towards Unprecedented Growth

India's medtech market is experiencing rapid growth due to increased government investments in healthcare infrastructure and rising demand for advanced healthcare solutions. With 100% Foreign Direct Investment (FDI) allowed under the automatic route for manufacturing medical devices, the sector has attracted substantial international investment, with $3.22 billion in FDI inflows from April 2000 to September 2023. The export segment has also been robust, growing at a CAGR of 9-11% over the last five years, with projections indicating exports could reach approximately $10 billion by 2025.

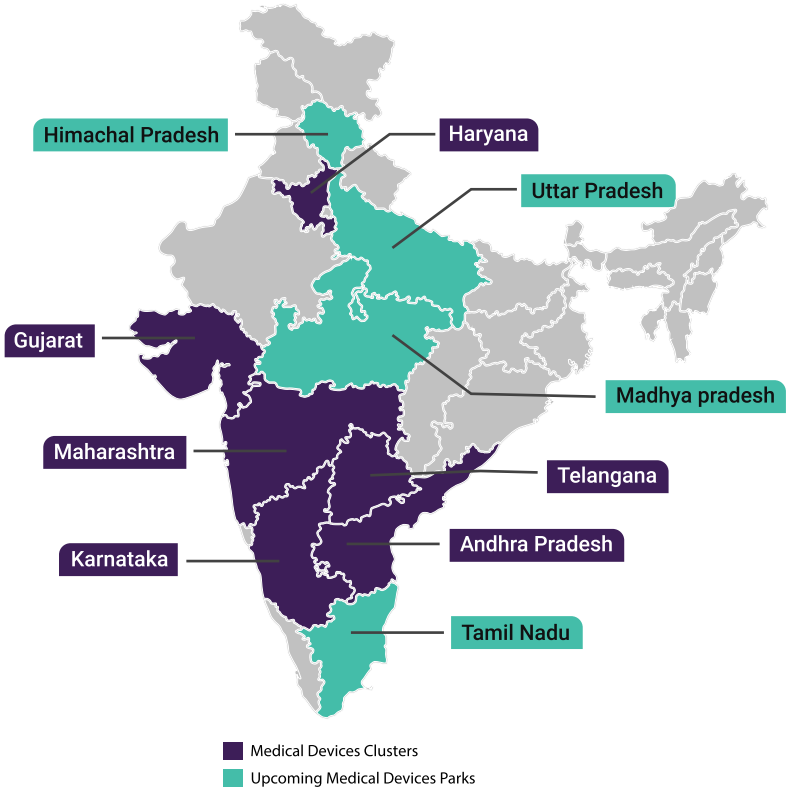
Currently 80% of the domestic sales constitute imported medical devices. Import of high-end devices has risen between 2019-20 and 2022-23, despite production linked incentives being in place. The expansion could reduce import reliance by 35 per cent and boost exports from the current level of $3.4 billion to $18 billion by 2030. The ripple effect of this shift could generate over 1.5 million jobs in medical device manufacturing and related healthcare services.

This growth can be attributed to increasing income levels, investments by the private sector in healthcare, a rising elderly population, rise of chronic diseases, increase awareness of health among people, popularity of medical tourism and supporting government policies. India spends just $8.6 per capita on medical technology, compared to the worldwide average of $75. In contrast, projections show that by 2030, India's healthcare market will have grown from $200 billion to $600 billion, bringing the per capita cost up to $35. Medical tourism, telemedicine, and large-scale hospital spending will fuel expansion.

India's offerings

- Skilled Workforce
- Cost-Effective Manufacturing
- Diverse Manufacturing Base
- Medical Tourism
- Research and Development
- International Collaboration
- Regulatory Framework
- Telemedicine and Digital Health

QUICK FACTS



Key Trends

Big Data Robotics
Diagnostic Kits
Wearables
Startups

Key Products (Export)

Ventilators
PPEs
Diagnostic kits
Sanitizers
Surgical gloves

Key Export Countries

US
France
Germany
Singapore
China
Turkey
Brazil
The Netherlands
Iran
Belgium

The Investment Boom

Surge Fueled by Rapidly Evolving Market Dynamics

Foreign Direct Investment (FDI) in India's burgeoning medical device sector saw a significant uptick, reaching US$3.4 million in the first three quarters of FY23, up from US$1.9 million in FY22. This surge represents the highest level of FDI inflows since FY17, underscoring India's position as one of the fastest-growing markets globally for medical devices.

The sector saw robust growth, with a 2.89% increase in value shipments in 2022 compared to 2021. Over the five-year period from 2017 to 2022, the compound annual growth rate (CAGR) stood at 6.35%, reflecting the sector's dynamic expansion trajectory. Analysts project continued rapid growth, forecasting that the domestic market, valued at over US$8 billion in 2021, will surpass US$20 billion by 2027, growing at an annual rate of approximately 17%.

Moreover, the domestic market for medical devices was valued at over US$8 billion in 2021, with analysts predicting it to exceed US$20 billion by 2027, growing at approximately 17% annually. In the first three quarters of 2023 alone, India attracted FDI worth US$464 million in MedTech, surpassing the total for the entire year of 2022, according to the Medical Technology Association of India (MTaI).

Private investments play a crucial role in the growth and development of India's medical technology sector. Companies like Siemens Healthineers have established R&D centers in Bengaluru, dedicated to developing medical devices for both domestic and international markets. Additionally, collaborations such as GE Healthcare's diagnostic centers in Madhya Pradesh and Gujarat, and B Braun's hemodialysis centers in Andhra Pradesh highlight the private sector's contribution to expanding healthcare services across India. These investments not only drive innovation but also enhance R&D capabilities, which are essential for developing high-end medical devices.

Boston Scientific expanded its presence in India by launching a new R&D center in Pune in 2023, adding to its existing facility in Gurugram established in 2016. Medtronic, a key player in the international medical device sector, has made substantial investments totaling USD 510 million to date in its Medtronic Engineering & Innovation Centre (MEIC) in Hyderabad. Siemens Healthineers has committed USD 179.7 million (EUR 160 million) between 2020 and 2025 to establish an innovation hub in Bengaluru. Stryker, known for its innovations in the medical device industry, inaugurated a neurovascular research lab at its Global Technology Center (SGTC) in Gurugram in 2022. Additionally, Omron Healthcare announced plans to establish a medical device manufacturing plant in Tamil Nadu with an investment of US$15.5 million. This initiative is expected to contribute significantly to local manufacturing capabilities in the medical device sector.

In recent years, there has been a notable surge in the emergence of startups within India's medical device sector, gaining traction both domestically and internationally. India has fostered a thriving ecosystem with over 250 startups specializing in medical devices and allied technologies, underscoring the pivotal role of startups and investors in advancing the sector. This growth has been significantly fueled by robust backing from venture capital (VC) and private equity (PE), which has acted as a pivotal catalyst in propelling these startups forward. Notable deals in 2022 and 2023 include substantial investments in companies like Skanray Technologies and Meril Life Sciences, both prominent players in developing innovative medical devices. Meril Life Sciences secured a significant investment of USD 210 million from Warburg Pincus in 2022, highlighting strong investor confidence in its innovative capabilities and product portfolio. Similarly, Sahajanand Medical Technologies received USD 150 million from Samara Capital, focusing on advancements in molecular diagnostics. These substantial investments underscore the growing recognition and financial backing that Indian MedTech startups are attracting on a global scale.

Key developments

2022: Medtronic invests $160 million to expandits R&D centre

2023: Siemens Healthineers sets up MRI machine manufacturing facility in Bengaluru.

2024: Wipro GE Healthcar invests US$ 1 billion in R&D

2024: HORIBA India invests Rs 200 crore into manufacturing of medical equipment in Nagpur

Mergers & Acquisitions in the last 5 years

2020►	Medtronic & Mazor Robotics	$1.7 billion
	Thermo Fisher Scientific & Qiagen	$11.5 billion
	Becton Dickinson & C.R. Bard	$24 billion
2021►	PharmEasy & Thyrocare	$612.8 million
	Tata Digital & 1mg	$270 million
	Boston Scientific & Preventice Solutions	$925 million
	Philips & BioTelemetry	$2.8 billion
	Medtronic & Intersect ENT	$1.1 billion
	Siemens Healthineers & Varian	$16.4 billion
	GE Healthcare & BK Medical	$1.45 billion
	Baxter & Hillrom	$12.5 billion
	Stryker & Vocera Communications	$3.1 billion
2022►	Boston Scientific & Apollo Endosurgery	$615 million
	Becton Dickinson & Parata Systems	$1.53 billion
	Johnson & Johnson & Abiomed	$16.6 billion
	Thermo Fisher Scientific & The Binding Site	$2.6 billion
2023►	Boston Scientific & Relievant Medsystems	$850 million
	Johnson & Johnson & Laminar	$400 million
	Thermo Fisher Scientific & CorEvitas	$912.5 million
	Thermo Fisher Scientific & Olink Holding	$3.1 billion
2024►	Boston Scientific & Axonics	$3.7 billion
	Boston Scientific & Silk Road Medical	$1.26 billion
	Becton Dickinson & Edwards Lifesciences	$4.2 billion
	Johnson & Johnson & Shockwave Medical	$13.1 billion

MILESTONES

The Movers & Shakers in the Indian MedTech industry

In August 2023, DBT-BIRAC-supported startup Voxelgrids unveiled their indigenously developed lightweight, affordable 1.5 Tesla MRI scanner, set to cut device costs by 50% and scanning costs by 40%. It's currently undergoing clinical validation.

In May 2023, Omron Healthcare, a Japanese personal healthcare product manufacturer and distributor, revealed plans to establish a medical device manufacturing plant in Tamil Nadu, investing $15.5 million.

Hindustan Syringes & Medical Devices Ltd, in April, 2023, has achieved another milestone of supplying 1.75 billion syringes of the total 13.3 billion COVID-19 vaccines administered globally.

In March 2023, Siemens Healthineers, a medtech company focusing on precision medicine and healthcare digitalization, disclosed a $157.2 million investment to establish a full-fledged campus in Bommasandra, Bengaluru.

Medtronic bolstered its presence in India by investing approximately US$ 362.8 million to expand Medtronic Engineering & Innovation Center in Hyderabad.

The first indigenously-developed RT-PCR kit for testing monkeypox was launched by Transasia at the Andhra Pradesh Medtech Zone (AMTZ) in August, 2022.

In August 2022, Wipro GE Healthcare partnered with medical device maker Boston Scientific to offer comprehensive, cutting-edge cardiac interventional care solutions in India.

FDI inflow in India in the medical and surgical appliances sector stood at US$ 2.76 bn between April 2000-December 2022.

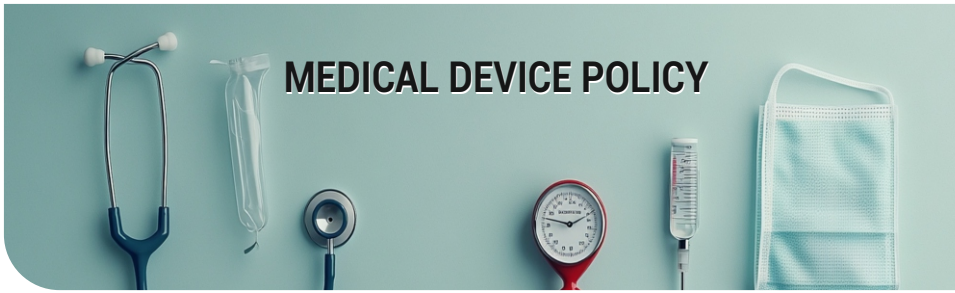
In July 2022, the Rajiv Gandhi Cancer Institute and Research Center (RGCI) in New Delhi received its first-ever Made-in-India Surgical Robotic System, the SSI-Mantra, which was developed by med-tech startup SS Innovations.

Medtronic has launched a Surgical Robot Experience Center (SREC) in Gurugram, Haryana, the first of its kind in South Asia. The SREC will be focused on the education and training of surgeons in robot-assisted surgery.

In November 2021, Cipla launched 'Spirofy', India's first pneumotach based portable, wireless spirometer.

POLICY

Driving India's MedTech Sector Growth



The medical devices sector in India is an essential and integral constituent of the Indian healthcare sector, forming an important pillar in the healthcare delivery system along with healthcare providers, pharmaceuticals and health insurance industry, thereby helping achieve the key values enshrined in the National Health Policy (NHP) 2017. The Government of India has commenced various initiatives to strengthen the medical devices sector, with emphasis on research and development and 100% FDI for medtech to boost the market.

To drive the growth of the sector, a draft National Medical Device Policy, 2023 has been prepared in consultation with the medical device industry. The draft is under consideration for finalization of the Policy. The policy is expected to facilitate an orderly growth of the medical device sector to meet the public health objectives of access, affordability, quality, and innovation. The policy is expected to help the sector grow from the present US$ 11 billion to US$ 50 billion by 2030.

To promote domestic manufacturing and attract investments, the government has launched a Production Linked Incentive (PLI) scheme, with a total outlay of funds worth US$ 468.78 million for the period FY21-28. Additionally, the "Promotion of Medical Device Parks" program has been initiated with a total financial investment of Rs. 400 crore (US$ 48.97 million) to support the development of Medical Device Parks.

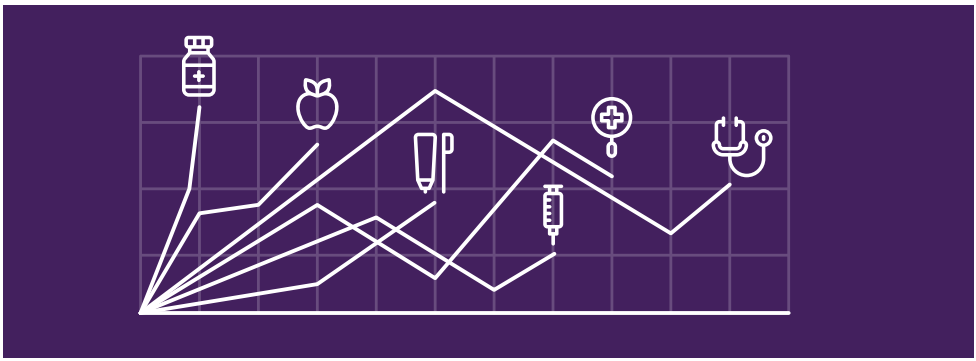
Furthermore, the National Medical Devices Promotion Council (NMDPC) has been reconstituted to drive the growth and innovation in the MedTech industry. The establishment of medical device parks in states like Himachal Pradesh, Tamil Nadu, and Uttar Pradesh is expected to attract significant investments and generate employment opportunities.

The Department of Commerce has also set up a separate Export Promotion Council for Medical Devices, which is located in NCR, YEIDA, in Uttar Pradesh. This initiative is part of the clusters' development scheme supported by the Government of India.

Overall, these measures and initiatives are expected to boost the growth and innovation in the medical devices sector, making India a global hub for manufacturing and innovation in the coming years.

OUTLOOK

India's Ambitious Vision for the Sector



India's MedTech sector is poised for significant growth in the coming years, leveraging untapped opportunities across various fronts. The key areas include advancing telemedicine and digital health solutions, capitalizing on India's robust IT capabilities, and addressing healthcare challenges in rural communities.

Both global and Indian medical device companies can play a critical role in developing India as a manufacturing hub for domestic and international markets. There is a huge potential waiting to be tapped, with opportunities to cater to the under-penetrated domestic market and address the requirements in other nations. The key drivers going forward are indigenous innovation, manufacturing, collaborations, and a focus on the production of low to medium technology products.

The Indian government is forging a new road for the accessibility of medical devices by placing the industry on accelerated growth. With a focus on R&D and 100% FDI under the automatic route for both brownfield and greenfield medical device establishments, the Indian government has launched efforts to strengthen the medical device industry.

Integration of cutting-edge technologies such as AI, IoT, and big data analytics into medical devices is expected to revolutionize healthcare outcomes and drive industry innovation. Export expansion into emerging markets in Africa, Latin America, and Southeast Asia offers substantial growth potential, with Indian firms well-positioned to meet diverse global healthcare needs.

A collaborative ecosystem involving industry, academia, and government will play a crucial role in fostering innovation and competitiveness. Initiatives focused on collaborative research, knowledge sharing, and skill development are set to enhance India's global MedTech leadership. With its expanding market, skilled workforce, and conducive regulatory environment, India aims to achieve its ambitious target of becoming a USD 50 billion MedTech industry by 2030, delivering innovative healthcare solutions worldwide.

BIRAC - An Ecosystem Enabler

Funding and Beyond

Biotechnology Industry Research Assistance Council (BIRAC) is a not-for-profit Section 8, Schedule B, Public Sector Enterprise, set up by Department of Biotechnology (DBT), Government of India as an Interface Agency to strengthen and empower the emerging Biotech enterprise to undertake strategic research and innovation, addressing high unmet needs through development of affordable products and technologies.

BIRAC Schemes and activities are meant to create a pipeline of entrepreneurs & startups in the country by providing systematic and value added hand-holding during the journey of an idea maturing into a product for commercialization.

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birac
Ignite Innovate Incubate

BIRAC IMPACT

10+ YEARS OF BIRAC

Nurturing & Strengthening Biotech Innovation Enterprise

- **95** Incubation Centres
- **35000+** High skilled jobs created
- **15 Lakh+** Students/ entrepreneurs engaged
- **4800+** Startups/other beneficiaries supported
- **800+** Products in market
- **28000+** Proposals assessed
- **5500 Cr+** Follow–on funding raised by>130 Startups
- **100+** National & International Partnerships
- **75000 Cr+** Startup Valuation
- **400+** Academia Supported
- **10,000+** Mentor Pool
- **4000 Cr+** BIRAC Funding
- **6600 Cr+** Total Investment
- **2600 Cr+** Co-funding by Industry & Others

INTERVIEW

Indian MedTech industry has the potential to unlock significant opportunities for global players

Dr Rajiv Bahl, Secretary, Department of Health Research (DHR) and Director General, Indian Council of Medical Research (ICMR)

Indian MedTech industry aspires to be US$ 50 billion by 2030. How are the DHR and ICMR contributing to the growth of this industry through various policy initiatives?

We have always been at the forefront for developing biomedical interventions for wider societal benefit. Under the guidance of NITI Aayog, 'MedTech Mitra', a joint initiative by ICMR and Central Drugs Standard Control Organization (CDSCO), was launched for hand-holding the medical device and diagnostic innovators. We have also set up the Medical Device & Diagnostics Mission Secretariat (MDMS) to support and catalyze research, development and indigenous manufacturing of cost effective medical devices and diagnostics.

We have developed a policy on Biomedical Innovation & Entrepreneurship for Medical Professionals, Scientists and Technologists for ensuring multi-disciplinary collaboration, promoting start-up culture and to develop an innovation led ecosystem. We have also created Research Infrastructure Sharing Ecosystem (P-RISE) policy for sharing of DHR-ICMR research infrastructure at our institutes for expeditious technology development including medical device and IVDs. We have created 'Ethical Guidelines for Application of Artificial Intelligence in Biomedical Research and Healthcare' to guide safe development, deployment and adoption of AI based technologies in biomedical research and healthcare.

India's National Medical Devices Policy 2023 was launched with the objective of supporting the industry's growth from US$11 billion in 2022 to US$50 billion in 2030.

How is the ICMR promoting the industry-academia collaboration and startups in the MedTech space?

One of the flagship schemes of MDMS is ICMR-DHR-Centres of Excellence (CoE) established at IITs to foster strategic Make-in-India product development in synergy with the requirement of the National Health Missions, Ayushman

Bharat-Health and Wellness Centres and Public Health programs of Government of India for major public health impact. All ICMR-DHR CoEs works in collaborative model wherein medical institutes, engineering institutes and industry partners come together to drive unmet healthcare need driven product development, scale-up and effective commercialization.

ICMR collaborates with innovators from academia & industry for providing support for conducting clinical validation studies for MedTech products in the area of National Health Priorities through ICMR - Indian Clinical Trial And Education Network (INTENT) and phase-1 clinical trial network.

What steps are being taken to ensure that innovations in medical devices are accessible and affordable for the broader population?

ICMR is providing strategic holistic handholding support towards the development of MedTech products aligned with the needs of National Health Mission and Ayushman Bharat Health & Wellness centres for their effective placement at PHCs/CHCs for wide public use.

To facilitate the process of transparent and evidence informed decision making, Government of India has created an institutional arrangement called the Health Technology Assessment in India (HTAIn) under the Department of Health Research (DHR) for evaluation of appropriateness and cost effectiveness of available and new health technologies.

ICMR has released the National List of Essential Assistive Products (NLEAP) that is a list of 21 assistive products and technologies that are deemed essential for individuals with functional impairments to improve their quality of life and participation in the society.

ICMR has finalized the country's first National Essential Diagnostics List (NEDL) that has been developed for all levels of health care – village level, primary, secondary and tertiary care. It builds upon the Free Diagnostics Service Initiative (FDI) and other diagnostics initiatives of the Health Ministry to provide an expanded basket of tests at different levels of the public health system.

> "Emergence of MedTech Parks in India is to establish highest quality common infrastructure facilities, thereby facilitating convenient access to standard testing and laboratory facilities."

How do you envision the future of medical devices and role of right policies in facilitating the growth?

Indian National Medical Devices Policy 2023 was launched with the objective of supporting the industry's growth from US$11 billion in 2022 to US$50 billion in 2030. The Promotion of Research and Innovation in Pharma MedTech Sector (PRIP) policy aims to elevate the research and innovation landscape in the pharma-MedTech sector. Again, the MedTech Parks initiative targets establishment of highest quality common infrastructure facilities.

ICMR through MedTech Mitra is providing strategic guidance regarding quality standards, test requirements and regulations to be complied by the innovators for ensuring safe and quality product for wide public use.

OPINION

Andhra Pradesh MedTech Zone: The Emerging Global HealthTech

Dr Jitendra Sharma, Managing Director, Andhra Pradesh Medical Technology Zone (AMTZ)

India's medical technology sector, once a nascent and unassuming player in the global healthcare ecosystem, is now fast emerging as a formidable force poised to redefine the future of global health. With an impressive compounded annual growth rate (CAGR) of 15%, the Indian medtech market is expected to reach USD 50 billion by 2030, an achievement that can only be attributed to a confluence of factors working in harmonious tandem: the rise of an aspirational middle class, the increasing prevalence of chronic diseases, and the government's strategic focus on fostering innovation, technological advancement, and international collaboration.

The backbone of this sector's meteoric rise is an unwavering commitment to quality, accessibility, and affordability. It is these very principles that have enabled India to position itself not merely as a consumer of global medical technologies but as a credible, reliable, and competitive player in the global medtech supply chain. At the heart of this transformation is the Andhra Pradesh MedTech Zone (AMTZ), an institution that stands as a towering monument to India's medtech revolution.

The establishment of AMTZ represents a leap forward in the nation's healthcare trajectory, underscoring the country's determination to foster innovation, stimulate local manufacturing, and cater to both domestic and global healthcare needs. Nestled in a sprawling 270-acre campus in Visakhapatnam, AMTZ is not just a manufacturing zone—it is an ecosystem of innovation, research, and development that boasts world-class infrastructure. With ISO-certified cleanrooms, cutting-edge prototyping facilities, and specialized testing laboratories, the zone has swiftly attracted over 200 companies, ranging from domestic firms to multinational giants.

However, one must not be mistaken into thinking that AMTZ's success is purely a matter of infrastructure. Rather, it is a product of enlightened government policies designed to incentivize growth and collaboration. Pro-business frameworks such as tax incentives, fast-track regulatory approvals, and financial subsidies have created a nurturing environment for companies to flourish.

But what truly elevates AMTZ—and, by extension, India's medtech sector—is the emphasis on international partnerships. With satellite offices in over 30 countries, AMTZ has effectively positioned itself as a global player in medtech diplomacy. Whether it is supplying solar-powered oxygen concentrators to African nations or embarking on groundbreaking research on 3D bioprinting in collaboration with Australia, AMTZ has made international collaboration a cornerstone of its success. The zone's engagement with European partners, leading to the establishment of world-class stent manufacturing facilities, further cements its reputation as a global medtech powerhouse.

From Innovation to Action: Catalyzing India's medical equipment production

India's response to the COVID-19 pandemic underscores AMTZ's capacity for timely innovation and rapid scaling. Initially producing a modest 3,000 kits daily at a single production center, AMTZ rapidly, scaled operations, reaching an astonishing production capacity of nearly one million kits per day by April 2021. This monumental achievement was not limited to test kits; the zone simultaneously ramped up production of ventilators, N95 masks, and other critical medical supplies.

As India now looks toward the future, AMTZ remains a critical engine of growth for the country's medtech sector. Government initiatives like the Make in India campaign and the Production Linked Incentive (PLI) scheme are further catalyzing the industry, enabling domestic manufacturers to produce for both local and global markets. These programs are designed to reduce dependency on medical device imports, promote exports, and elevate India's role in the global medtech supply chain.

AMTZ is also making significant strides in R&D) and its focus on cutting-edge fields such as AI diagnostics, 3D printing, and medical robotics is setting the stage for the development of next-generation medical technologies.

Opportune time for global investors

For investors, the appeal of India's medtech sector—and AMTZ in particular—is undeniable. With cost-effective manufacturing capabilities, an integrated ecosystem that supports rapid scaling, and a focus on affordable healthcare solutions, India is uniquely positioned to address the needs of underserved markets in Africa, Southeast Asia, and beyond. The nation's medtech industry is not just about innovation for innovation's sake; it is about creating scalable, sustainable, solutions that can be deployed globally.

> The establishment of AMTZ represents a leap forward in India's healthcare trajectory, underscoring the country's determination to foster innovation & stimulate local manufacturing.

The export capabilities of AMTZ further bolster its attractiveness as an investment destination. Proximity to seaports, coupled with a strong focus on innovation and affordability, positions the zone as a global hub for medical device distribution. As healthcare demands continue to rise globally, particularly in aging populations and regions plagued by chronic diseases, the need for innovative, affordable medical devices will only increase.

OPINION

MedTech Revolution: BIRAC's Role in Advancing India's MedTech Ecosystem

Dr Jitendra Kumar, Managing Director, Biotechnology Industry Research Assistance Council (BIRAC)

India's medical devices sector is growing rapidly, driven by both domestic demand and global opportunities. India ranks as the fourth largest medical device market in Asia, following Japan, China, and South Korea, and is among the top 20 globally. The market size of the medical devices sector was estimated at $11 billion in 2020 and is projected to grow to $50 billion by 2030. The diagnostic equipment market is also expanding, expected to reach $6 billion by 2027, up from $4 billion in 2023.

Despite this growth, India relies heavily on imports, with an import dependency of 70-80% for medical devices. However, the country is making strides in increasing exports, which surpassed $1.6 billion in 2022-23. The Indian government recognizes the sector's potential and has implemented several initiatives to support its development.

BIRAC aims to stimulate development of affordable, sustainable solutions to address India's healthcare challenges by connecting industry, academia and government. Operating across healthcare, agriculture, industrial biotechnology, and bioinformatics, BIRAC funds product development, provides mentorship and infrastructure support to Indian start-ups and SMEs. Its focus on affordable healthcare has led to significant progress, particularly in the Medtech sector, positioning BIRAC as a key player in advancing India's biotechnology ecosystem and driving inclusive, sustainable growth.

MedTech Initiatives and Innovations

India's healthcare system faces significant challenges, particularly in medical devices, due to a growing population and rising lifestyle diseases. With most devices imported, costs are high and accessibility is limited. To address this, promoting indigenous manufacturing and innovation in the Medtech sector is crucial. BIRACs flagship programs support indigenous product development, accelerate research, and fosters a sustainable healthcare ecosystem. By offering funding, infrastructure, and technical support, BIRAC enables innovators to bring impactful products to market, overcoming regulatory and clinical hurdles.

Key Focus Areas of BIRAC's Medtech Initiatives

Promoting Indigenous Manufacturing of Medical Devices:

Through its programs, BIRAC supports startups and small-scale manufacturers in developing affordable and high-quality medical devices tailored to India's needs. BIRAC is also strengthening the infrastructure across India through the network of BioNEST incubators and MedTech facilities providing services for rapid prototyping, EMI/EMC testing, small and large animal testing.

Innovation and Product Development:
BIRAC places a strong emphasis on fostering innovation in medical devices, especially in high-impact areas like diagnostics, implants, and wearables. Its programs encourage research and development (R&D) efforts to create solutions that address unmet medical needs in India. From low-cost diagnostic kits to advanced imaging devices, the goal is to bring innovative medical products to market that can improve the quality of healthcare delivery across the country.

India relies heavily on imports, with an import dependency of 70-80% for medical devices. However, the country is making strides in increasing exports, which surpassed $1.6 billion in 2022-23.

Strengthening the Healthcare Ecosystem:
BIRAC recognizes that innovation does not happen in isolation. To foster a robust Medtech ecosystem, BIRAC promotes partnerships between academia, industry, and government bodies. These collaborations are essential for leveraging shared facilities, pooling expertise, and facilitating knowledge transfer. Additionally, BIRAC invests in skill development programs aimed at building a capable workforce to support the Medtech sector's growth.

Impact

BIRAC has played a pivotal role in supporting groundbreaking innovations across India's Medtech sector. Type of medical devices supported by BIRAC include diagnostics devices, imaging equipment, wearable devices, surgical tools, assistive devices, telemedicine devices, and therapeutic devices

Around Rs 678 Crores has been pumped by BIRAC into the MedTech sector through various programs, concerted efforts, BIRAC has been successful in facilitating commercialization of about 90 products and technologies; and 470 IPs being filed in this sector. It has a robust network of incubation centers, MedTech facilities, funding schemes and mentor network.

Future Direction and Vision 2030

Looking ahead, BIRAC's vision for 2030 is to establish India as a global leader in biotechnology and medical devices. By prioritizing innovation, capacity building, and cross-sector collaborations, BIRAC aims to create a self-sustaining ecosystem that advances healthcare. The organization will strengthen indigenous manufacturing for both domestic use and export, positioning India competitively in the global Medtech market. With increased R&D investments, expanded global partnerships, and a focus on next-generation medical technologies, BIRAC is committed to addressing India's healthcare challenges and driving inclusive, cutting-edge solutions that benefit all.

OPINION

Unlocking India's MedTech Potential: New Horizons for Global Investors

Pavan Choudary, Chairman, Medical Technology Association of India (MTaI)

India stands at a critical juncture in healthcare transformation. The convergence of innovation, technology, and increasing access has created a fertile ground for the MedTech industry to thrive. As one of the world's fastest-growing economies with a population of 1.4 billion people, India offers a remarkable opportunity for global investors to access a vast, yet largely untapped, emerging market.

The Indian healthcare landscape is evolving rapidly, driven by demographic shifts, urbanization, and rising demand for quality care. Key public health initiatives, including Ayushman Bharat (AB PM-JAY), are expanding access to healthcare for millions, particularly in underserved areas. Yet, India still faces a significant shortfall in healthcare infrastructure, and healthcare costs remain a burden for many.

This dichotomy is where MedTech innovation can make the greatest impact—by providing quality, cost-effective, scalable solutions that enhance healthcare access for all. For investors, India's healthcare sector offers a robust entry point into a market where the need for innovative solutions is not just a commercial opportunity but a societal necessity.

Government Support: A Growth Catalyst

India's MedTech ecosystem is backed by strong policy support. The government has introduced a series of initiatives, including the Production Linked Incentive (PLI) Scheme and the the National Medical Device Promotion Council is another initiative of the government to improve the ease of doing business in the country, encourage research and development, and build infrastructure to further enhance the sector.

For investors, India's healthcare sector offers a robust entry point into a market where the need for innovative solutions is not just a commercial opportunity but a societal necessity.

This government backing translates into a smoother market entry, as well as long-term benefits for companies willing to establish operations or partnerships in India. The clear regulatory pathways and

Atmanirbhar Bharat initiative, which incentivizes local manufacturing and innovation. The creation of dedicated Medical Device Parks and the integration of the National Digital Health Mission (NDHM) further provide a strong infrastructural framework for growth.

For global investors, the combination of governmental incentives and a clear policy roadmap makes India a relatively low-risk, high-reward investment destination. The groundwork is already laid, and the time is ripe for international players to step in and scale these opportunities.

The Tech Advantage: A Convergence of Disciplines

India's strength in information technology offers a unique advantage in MedTech. Digital health solutions like telemedicine, artificial intelligence (AI) in diagnostics, robotics-assisted surgeries, and wearable technologies are rapidly transforming healthcare delivery. Across the country, several regions have emerged as innovation hubs for MedTech. Cities like Bengaluru, Hyderabad, and Pune are home to thriving ecosystems that combine startups, established companies, and research institutions. These areas can bring collaboration between technology experts and healthcare professionals, creating a hotbed for innovation in fields like AI-driven diagnostics and telemedicine.

For investors, these hubs represent an opportunity to harness India's growing innovation engine. Collaboration with local innovators offers the potential for developing groundbreaking solutions not only for India's healthcare needs but also for global markets.

Partnerships as the Future of MedTech Growth

Medical devices are different from other healthcare industries as they develop and grow based on a dynamic innovation and manufacturing ecosystem. Such a system is often born with the help of global legacy technology companies and allows indigenous entrepreneurs and physicians to create and bring local medical technology to the market. These partnerships will not only foster innovation but also drive capacity building, technology transfer, and local talent development.

> While navigating India's regulatory framework can be complex, it is crucial for investors to engage with industry associations and local regulatory experts to ensure compliance.

A Pivotal Moment for Global Investors

India's MedTech sector is poised for tremendous growth, offering global investors a unique opportunity to be part of this transformation. With a robust policy framework, a skilled talent pool, innovation hubs, and a growing demand for healthcare innovations, India offers a fertile ground for investments that can yield both financial returns and societal impact.

As India continues to address its healthcare challenges, the role of MedTech innovation will become increasingly central. Investors who recognize this pivotal moment and act decisively will find themselves at the forefront of one of the most exciting growth stories in global healthcare.

OPINION

Sustainable and Affordable Medical Devices: India's Path to Global Leadership

Rajiv Nath, Forum Coordinator, Association of Indian Medical Devices (AiMeD)

India's medical devices manufacturing industry is poised for rapid growth, placing the country on the global stage through innovation. The world has seen an increasing demand for affordable, sustainable and high-quality medical devices. Indian medical devices manufacturing companies have embraced this challenge, offering solutions that not only meet the highest standards of quality but are also accessible to a broader global market.

The Indian Medical Devices Market has the potential to expand from $16 billion currently to about $50 billion by 2030. India is on its way to $18 billion worth of exports in medical devices in the next few years as it expands both its product portfolio as well as technological prowess.

Rising Exports

Indian companies have made significant strides in developing and manufacturing a wide range of medical devices through state-of-the-art facilities. From diagnostic equipment to surgical tools and life-support devices, the Indian medical devices manufacturing sector is now offering cost-effective and innovative products for domestic and international markets. The exports of medical equipment and devices from India has steadily risen from Rs 2.2 Billion US$ in 2018-19 to Rs 3.8 Billion US$ in 2023-2024.

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In the period of 2018-19 to 2023-2024, the export of consumables & disposables has risen from 1.2 Billion US$ to 1.8 Billion US$. Similarly, the

export of electronics and equipment has gone up from 850 Million US$ to 1.45 Billion US$. At the same time, the export of implants have jumped to 250 Million US from 80 Million US$.

Make in India Initiative

The government of India's "Make in India" initiative has been instrumental in encouraging indigenous production in the medical devices industry. The introduction of favourable policies like the Public Procurement Order (PPO) has been instrumental in boosting the industry prospects. The establishment of dedicated Medical Device Incubators like the BioValley, MediValley, C Camp, IKP Knowledge Park, Venture Centre, BioNests and Bitec have helped the Startup Eco System in commercialization of innovative devices.

Indian companies have innovative products that cater to the specific needs of the Indian healthcare system while maintaining global standards. For example, India has developed portable and affordable ECG machines, glucometers and ultrasound devices that can be used in rural and remote areas in the developing world. These devices, often powered by batteries or solar energy, are crucial in settings where electricity and infrastructure are unreliable. Innovations like TruNat a portable, battery powered molecular diagnostic machine that can test infection disease like TB (Tuberculosis) and Covid 19.

Global Competitiveness and Sustainability

What sets Indian medical equipment and device manufacturing companies apart is their focus on sustainability, both in terms of environmental impact and long-term economic viability. Sustainably designed Medical Devices like DISPOJEKT Safety Engineered Syringes not only prevent Needle Stick injuries but are designed with reduced weight and size leading to lower logistics and transportation costs and minimise environmental carbon footprint. Cathlabs from Innvolution are example of recipients of globally prestigious Red Dot Design Award.

> "The Indian companies are now exporting medical devices to advanced countries like the USA, Germany and Netherlands."

Indian manufacturers are increasingly meeting international quality standards, with many achieving globally acceptable ISO certifications or Regulatory approval e.g. SMT's Cardiac Stents further boosting their competitiveness on the world stage.

Investment Opportunity

The Indian companies are now exporting medical devices to advanced countries like the USA, Germany and Netherlands. The Indian medical device making industry is aiming to be among the top five in the world and is targeting about 1200 technical collaborations and 200 joint ventures from organizations around the world. This presents a unique opportunity for the world investor community to participate in the strong medical devices growth story in India and avail the USD10 billion investment opportunity in this Sunrise Industry which will be the next Big Success Story after IT and Pharma.

OPINION

Opportunities for Growth in Tier II and Tier III cities: Expanding reach of medical devices in India

Vivek Mishra, Director and CEO, Fibroheal Woundcare

The Tier II and Tier III cities in India, home to 70% of the population, represent a vast yet underserved market in the healthcare sector. Despite their significant demographic weight, these regions often grapple with inadequate treatment options, outdated equipment, a shortage of specialists, and long travel distances for quality healthcare.

Currently, around 80% of the medical devices used in India are imported from countries like the U.S., China, and Germany. These devices are primarily designed for users in developed countries, making them highly expensive for the rural and semi-rural populations of India. This reliance on imports not only poses a heavy economic burden on the country but also creates a mismatch between the design of the technology and the specific needs of India's healthcare system. Local infrastructure is often not equipped to handle the complex and costly devices, further limiting their usability.

The healthcare needs of rural India have evolved over the past decade, driven by increased patient awareness and the growing demand for better healthcare services. There is now a significant opportunity for India's indigenous medical device industry to rise to the occasion. The government's commitment to raising healthcare spending to 2.5% of GDP by 2025 (from 1.2% in 2020), with a particular focus on underprivileged populations, is a key driver of this growth. Moreover, initiatives like the 2016 Medical Device Rules are steps in the right direction, aimed at promoting local manufacturing and research in the medical device sector under the Make in India initiative.

Technological advancement is crucial to achieving India's national healthcare goals, from prevention to treatment and rehabilitation. Medical devices are increasingly integral to the daily practice of physicians, and as Tier II and Tier III cities develop, the demand for these devices will rise significantly. These cities offer unique growth opportunities, with lower overhead costs for setting up distribution, service, and manufacturing facilities compared to metropolitan areas.

To successfully penetrate the medical device market in these emerging regions, a strategic, three-pronged approach is essential:

1. Address local healthcare needs

The first step is to understand the specific healthcare challenges faced by the residents of Tier II and Tier III cities. Medical device solutions must be tailored to these unique needs, with a focus on affordability which means providing cost-effective devices that cater to middle- and lower-income populations will bridge gaps in healthcare delivery. Another area is primary healthcare focus under which devices that address basic yet critical needs such as active wound care, can make a significant impact in these regions. Again the rural adaptability is critical and medical devices must be easy to use, durable, and portable, ensuring they function effectively in areas with limited infrastructure.

Factors driving growth in Tier 2 & Tier 3 Indian cities

- Increased penetration of health insurance
- Improved medical infrastructure
- Better affordability due to growing income
- Growth in medical tourism
- Increased life expectancy from ~67.5 years to 70 years.
- Increased public spending
- Growing middle class population

2. Collaborate to improve access

Partnerships will be crucial to expanding the reach of medical devices including government hospitals as the main healthcare providers in these cities. Collaborating with public institutions can facilitate the introduction of cost-effective devices that improve patient outcomes. Also ensuring the robust distribution channels by partnering with local distributors and pharmacies ensures that medical devices are available where they are needed most is required. The community health programs can support local health initiatives and government programs to help reduce the healthcare burden while creating goodwill and long-term customer loyalty.

3. Drive awareness and adoption

Raising awareness is essential for effective adoption and training healthcare providers by collaborating with hospitals to train staff on the use of medical devices ensures better patient outcomes. The patient education campaigns could help in conducting awareness programs in local languages to help patients understand the benefits of medical devices for preventive care and treatment, increasing the likelihood of adoption.

Way Forward

Indian consumables and implants market stood at Rs 7,200 Crore in 2014 and expected to be Rs 15,000 Crore at the moment. This market is also generally considered as a competitive priced and high volume market. Out of 750 medical devices firms in the country, more than 65% have revenues less than Rs 15 Crore, 25 % are in the range of Rs 15-75 Crore and that's where we see a huge opportunity.

By focusing on these three key areas, businesses in the medical device sector can contribute not only to the growth of their operations but also to the upliftment of healthcare services in Tier II and Tier III cities. Accessible, affordable, and portable medical devices

have the potential to revolutionize healthcare in these emerging regions, providing patients with better treatment options without the need for travel to major cities. Additionally, the training and development of local healthcare professionals and technicians to operate these devices will contribute to local skill development and employment opportunities.

The expansion of medical devices in Tier II and Tier III cities is not just a business opportunity—it is a pathway to improving the quality of life for millions of Indians. With the right strategy, collaboration, and commitment to innovation, India can ensure that even its most remote regions have access to the healthcare they deserve.

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