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Industry Futures:
Medical Devices

Wipro's Industry Futures report for medical devices outlines the key trends to look for by 2030. Smart wearables and healthcare robotics are transforming patient care, enabling real-time monitoring and precision assistance. AI-personalized treatment and intelligent diagnostics enhance medical decision-making, while connected care ensures seamless patient data integration. Sustainable medical devices solutions promote eco-friendly practices, while agentic care fosters autonomous, adaptive healthcare solutions, shaping a more intelligent and efficient healthcare future.

Connected Care

01

In the near future, smart wearables will revolutionize patient care by continuously monitoring vital signs via advanced fabrics & patches, providing real-time health insights. These devices will enhance medication delivery & alert systems, improving patient safety & outcomes. By integrating affordable, clinically differentiated products with holistic services, healthcare systems can promote proactive management & improve care quality. Smart wearables like smart rings & cuffless blood pressure monitors will become mainstream, offering personalized health insights & predictive analytics. This technological shift will empower patients to self-manage conditions, leveraging an ecosystem approach for better health management & fostering connected care through enhanced collaboration with healthcare providers.

Healthcare Robotics

Digital Surgeries will augment surgeon skills, utilizing ambulatory surgical centers, and implementing an as-a-service model for hardware, software, & operations, healthcare can reduce hospital stays, lower capital expenditures, & improve operating theater turnovers. Healthcare robotics will play a significant role in these advancements. Advanced soft wearable devices, embedded with innovative smart fabrics, will seamlessly monitor vital signs, providing continuous health insights. Additionally, smart medical patches will facilitate precise medication delivery while constantly assessing vital metrics, delivering real-time data to healthcare providers. Emergency alert devices will ensure prompt responses during critical situations, significantly enhancing patient safety and outcomes. Integration of these technologies with healthcare robotics will further optimize healthcare delivery.

02

Intelligent Diagnostics

03

Soon, healthcare leaders will harness Intelligent Image Diagnosis and intelligent diagnostics to significantly enhance diagnostic accuracy. Autonomous Critical Care Assistance will streamline intensive care, leading to improved patient outcomes. Device Miniaturization in medical device technology will enable portable diagnostics, increasing accessibility and convenience. Furthermore, Decentralized Diagnostic Networks will empower remote healthcare delivery, effectively bridging gaps in underserved areas. Implementing innovative solutions including intelligent diagnostics, can reduce turnaround times, alleviate radiologist burdens, enhance accessibility in remote locations, and help counter skill shortages in healthcare.

Device-Enabled Care

Healthcare providers can leverage Brain-Computer Interface technologies to enhance patient interaction & feedback. Integrated Multi-Sensor Platforms will provide real-time health monitoring, while Synthetic Biology Tools will revolutionize personalized medicine. Agentic Care Assistance will empower patients with autonomous decision-making tools. These innovations will transform care delivery, making it more efficient, personalized, & patient-centric. Healthcare can be enhanced through EHR-based patient history summarization, AI-assisted parameter settings, AI-personalized treatment plans, & preventive care strategies. Agentic care frameworks, combined with AI-personalized treatment protocols, enable precision medicine while maintaining patient autonomy. Advanced medical device solutions further amplify these capabilities, ensuring seamless integration of data & responsive interventions.

04

Sustainable Medical Devices

05

Prioritizing sustainable medical devices through a circular ecosystem design that promotes reuse & recycling, combined with the use of smart materials, enhances device durability & efficiency while ensuring environmentally responsible practices throughout their lifecycle. Transitioning to plant-based material packaging will significantly reduce reliance on traditional plastics, leading to less waste in our healthcare systems. With autonomous waste segregation systems, waste management processes can be streamlined, making them more effective & environmentally friendly. By implementing carbon-neutral supply chains & sustainable packaging, sustainable medical devices minimize environmental harm while maintaining performance. For instance, biodegradable sensors (using plant-based polymers) & closed-loop recycling of hospital plastics exemplify this shift.

By 2030, the Medical Devices sector will experience substantial technological advancements and disruptions, presenting both opportunities and challenges for all stakeholders. Partnering with technology leaders like Wipro will enable lifesciences organizations to leverage innovations in AI, next-generation medicine, and data analytics and help them remain competitive, enhance patient engagement, and achieve sustainable growth in a swiftly changing environment of technologies.

About the Authors

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Varun Dube is the Head of Tech Strategy at Wipro. He is a seasoned technology consultant, advising CXOs on transformative business outcomes. With a deep understanding of emerging technologies and their potential to disrupt industries, Varun drives innovation and digital transformation for Wipro clients. His expertise in crafting and executing technology strategies, combined with his focus on emerging tech and co-innovation, helps organizations achieve sustainable growth and competitive advantage

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