Surgical Instruments Tracking Devices Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented by Component (Hardware, Software, Services), By Technology (Barcode Systems, Radio Frequency Identification Devices (RFID) Systems, Internet of Things (IoT)), By End User (Hospitals, Ambulatory Surgical Centers, Others), By Region & Competition, 2020-2030F

Market Report | 2025-08-25 | 185 pages | TechSci Research

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Report description:

Market Overview
Global Surgical Instruments Tracking Devices Market was valued at USD 321.45 million in 2024 and is expected to reach USD 750.29 million by 2030 with a CAGR of 15.17% during the forecast period. The global market for Surgical Instruments Tracking Devices is experiencing significant growth, driven by the increasing population need for better medical technology in the developing countries. Additionally, growing initiative and investments by government organizations for developing new software for tracking hospital data and diagnostic centres have significantly increased the demand for surgical instruments tracking devices, across different parts of the globe.
Additionally, the growing adoption of new technology in the healthcare sector has significantly increased and this awareness of using tracking devices and benefits is further expected to increase the demand for surgical instruments tracking device, thereby fuelling the market growth. Furthermore, increasing number of major key players in the market focus on developing new technology for benefit of users is further expected to increase the demand for surgical instruments tracking device market growth. According to a report published in January 2022 by the International Society of Aesthetic Plastic Surgery, the top five surgical procedures performed worldwide in aesthetics in 2020 were Breast Augmentation (1,624,281), Liposuction (1,525,197), Eyelid Surgery (1,225,540), Rhinoplasty (852,554), and Abdominoplasty (765,248).
Key Market Drivers
Increasing Emphasis on Patient Safety and Surgical Efficiency

Patient safety has become a top priority across healthcare systems globally. One of the significant risks during surgical procedures is the misplacement or retention of surgical instruments inside the patient's body. According to the U.S. Department of Health and Human Services (HHS), retained surgical items (RSIs) occur in 1 out of every 5,500 surgeries, which can lead to severe complications or even mortality. Surgical instrument tracking devices-equipped with RFID (Radio Frequency Identification) or barcode technologies-are increasingly being deployed to reduce such risks and enhance accountability in the operating room. Governments have responded to these safety risks with regulatory frameworks mandating better tracking. For example, the U.S. Food and Drug Administration (FDA) has implemented the Unique Device Identification (UDI) rule requiring medical device manufacturers to assign unique identifiers to devices, facilitating traceability and post-market surveillance. Hospitals adopting surgical tracking systems not only improve compliance but also streamline inventory management, reduce surgical delays, and ensure complete tray assembly before and after procedures. As surgical volumes continue to grow globally-particularly due to aging populations and the increase in elective procedures, the demand for safer, traceable instruments is fueling market growth.

Key Market Challenges

High Initial Cost and Infrastructure Limitations

One of the primary obstacles facing widespread adoption of surgical instrument tracking devices is the high upfront cost of implementation. These systems often involve purchasing tracking hardware (e.g., RFID scanners, barcode readers), upgrading software, training personnel, and integrating with existing IT systems. For small and mid-sized hospitals, particularly in low- and middle-income countries, these costs can be prohibitive. According to the World Health Organization (WHO), more than 50% of healthcare facilities in low-income nations lack access to essential medical technologies, let alone advanced digital tracking systems. The disparity in infrastructure limits the scalability of surgical instrument tracking devices globally. Even in more developed regions, public hospitals operating on tight budgets may deprioritize tracking systems in favor of more immediate care technologies.

Additionally, legacy equipment and outdated IT systems can hinder seamless integration. Not all hospitals have the technical readiness to adopt such platforms without significant upgrades. The lack of standardized protocols for RFID and barcode systems also creates interoperability issues between manufacturers and healthcare providers. Overcoming these challenges requires public-private partnerships, government funding support, and scalable solutions tailored for resource-constrained settings.

Key Market Trends

Integration with Artificial Intelligence and Predictive Analytics

A transformative trend in the surgical instrument tracking market is the integration of Artificial Intelligence (AI) and machine learning algorithms to enhance decision-making. AI-enabled systems can analyze historical usage data of surgical tools to predict future needs, identify instruments prone to wear and tear, and optimize tray composition for different types of surgeries. Governments and academic institutions are investing in AI research for healthcare optimization. For example, the U.S. National Institutes of Health (NIH) has funded multiple AI initiatives under its "Bridge2AI" program, emphasizing data-driven healthcare tools. When AI is integrated with surgical instrument tracking systems, it enables predictive maintenance, preventing potential failures during critical procedures.

Hospitals using AI-driven tracking platforms have reported reduced surgical delays, better inventory utilization, and lower sterilization turnaround times. This innovation also supports sustainability by minimizing the overuse or underuse of instruments. As AI becomes more embedded in hospital operations, its combination with instrument tracking systems is expected to revolutionize how surgical workflows are managed globally.

Key Market Players

- ASANUS Medizintechnik GmbH
- Becton, Dickinson, and Company
- B. Braun Melsungen AG
- FingerPrint Medical Limited
- Fortive Corporation
- Getinge AB
- Integra Lifesciences Holding Corporation
- Murata Manufacturing Co., Ltd

-Stanley Black & Decker, Inc.
-Steris plc.
Report Scope:
In this report, the Global Surgical Instruments Tracking Devices Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:
-Surgical Instruments Tracking Devices Market, By Component:
o Hardware
o Software
o Services
-Surgical Instruments Tracking Devices Market, By Technology:
o Barcode Systems
o Radio Frequency Identification Devices (RFID) Systems
o Internet of Things (IoT)
-Surgical Instruments Tracking Devices Market, By End User:
o Hospitals
o Ambulatory Surgical Centers
o Others
-Surgical Instruments Tracking Devices Market, By Region:
o North America
 United States
 Mexico
 Canada
o Europe
 France
 Germany
 United Kingdom
 Italy
 Spain
o Asia-Pacific
 China
 India
 South Korea
 Japan
 Australia
o South America
 Brazil
 Argentina
 Colombia
o Middle East and Africa
 South Africa
 Saudi Arabia
 UAE
Competitive Landscape
Company Profiles: Detailed analysis of the major companies presents in the Global Surgical Instruments Tracking Devices Market.
Available Customizations:
Global Surgical Instruments Tracking Devices Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information
-Detailed analysis and profiling of additional market players (up to five).

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