

Healthcare Robotics & Surgical Automation Market Forecasts to 2034 - Global Analysis By Product Type (Robotic Surgical Systems, Instruments & Accessories, Software & Control Platforms and Services & Maintenance), Surgical Specialty, Technology, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Healthcare Robotics & Surgical Automation Market is accounted for \$23.2 billion in 2026 and is expected to reach \$75.0 billion by 2034 growing at a CAGR of 15.8% during the forecast period. Healthcare Robotics & Surgical Automation refers to the use of robotic platforms, intelligent software, and automated technologies to support medical treatment, surgical procedures, and healthcare operations. These solutions enhance surgical accuracy, movement control, visualization, and efficiency while enabling minimally invasive interventions. The field covers surgical robots, rehabilitation systems, robotic prostheses, automated laboratory equipment, and hospital service robots. Increasing adoption of minimally invasive surgery, advancements in artificial intelligence and sensing technologies, demand for efficient healthcare delivery, and improvements in robotic capabilities are supporting market development. Advanced imaging, machine learning, and real-time analytics are also broadening applications across hospitals, clinics, laboratories, and specialized healthcare environments.

According to a peer-reviewed study published in JAMA, data from 169,404 patients across 73 hospitals showed that robotic surgery use increased from 1.8% in 2012 to 15.1% in 2018, demonstrating substantial adoption of robotic technologies across common surgical procedures.

Market Dynamics:

Driver:

Increasing adoption of minimally invasive surgery

Rising preference for minimally invasive surgical techniques is significantly supporting the growth of the Healthcare Robotics & Surgical Automation Market. Healthcare institutions and patients increasingly seek procedures that minimize tissue damage, reduce bleeding, shorten hospitalization, accelerate recovery, and improve surgical precision. Robotic technologies complement these procedures by offering enhanced visualization, instrument control, dexterity, and accuracy. Technological advancements are also expanding robotic-assisted applications across multiple medical specialties, including urology, gynecology, orthopedics, cardiovascular procedures, and general surgery, strengthening market adoption.

Restraint:

High initial cost of robotic systems

Significant upfront investment is a key factor limiting the adoption of healthcare robotics and surgical automation technologies. Robotic platforms often involve considerable spending on procurement, installation, infrastructure modifications, software connectivity, maintenance, and supporting equipment. Smaller hospitals and medical centers may find these financial commitments difficult to justify, particularly when operating under restricted investment budgets. Furthermore, ongoing costs associated with technical support, equipment maintenance, software upgrades, replacement components, and workforce training can raise total ownership expenses.

Opportunity:

Expansion of robotic surgery across emerging healthcare markets

Growing deployment of robotic surgery in emerging healthcare economies creates promising opportunities for market expansion. Hospitals in developing regions are upgrading medical infrastructure, strengthening specialized treatment capabilities, and exploring advanced technologies to improve surgical services. These developments can increase demand for robotic platforms, particularly as healthcare providers seek greater precision and minimally invasive treatment options. Collaborations with hospitals, medical institutions, and technology partners can also improve accessibility. Rising familiarity with robotic-assisted procedures is expected to support broader acceptance

and utilization across emerging healthcare environments.

Threat:

Cybersecurity and data privacy risks

Growing cybersecurity and privacy concerns can challenge the expansion of healthcare robotics and surgical automation. Modern robotic platforms often connect with hospital networks, digital applications, cloud environments, and sensitive patient databases, increasing their exposure to cyber threats. Unauthorized system access could interrupt procedures, compromise confidential information, or reduce confidence in robotic technologies. Healthcare institutions must consequently address security vulnerabilities, regulatory requirements, and data protection responsibilities. Concerns about potential security incidents may make some healthcare organizations cautious about implementing highly connected robotic solutions.

Covid-19 Impact:

The COVID-19 pandemic disrupted the Healthcare Robotics & Surgical Automation Market by causing widespread delays in elective surgeries and diverting hospital resources toward pandemic management. Reduced surgical activity temporarily constrained the utilization of robotic systems. At the same time, the crisis demonstrated how robotic technologies could help limit direct contact between healthcare workers and patients, assist with clinical workflows, and address accumulated surgical demand. As healthcare providers adapted to pandemic-related challenges, interest in automation and digitally enabled medical technologies increased.

The instruments & accessories segment is expected to be the largest during the forecast period

The instruments & accessories segment is expected to account for the largest market share during the forecast period. It encompasses robotic surgical instruments, graspers, staplers, energy-based tools, end-effectors, visualization accessories, trocars, cannulas, and other specialized equipment required during procedures. Because these products are repeatedly used and replaced throughout robotic-assisted surgeries, they generate consistent demand. Growing utilization of robotic systems across surgical specialties is increasing the need for compatible components. Furthermore, expansion of the installed robotic system base encourages continued consumption of related instruments and accessories, reinforcing their importance within the healthcare robotics ecosystem.

The ambulatory surgical centers (ASCs) segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the ambulatory surgical centers (ASCs) segment is predicted to witness the highest growth rate as these facilities increasingly integrate advanced technologies and robotic-assisted procedures. Their focus on outpatient treatment aligns with growing demand for minimally invasive interventions, shorter recovery periods, and efficient surgical workflows. Robotic systems can enhance precision, procedural consistency, and operating-room productivity while supporting faster patient throughput. Healthcare organizations are increasingly considering ASCs as efficient treatment settings, encouraging technology investments. Rising outpatient procedure volumes, ongoing robotic innovation, and greater acceptance of same-day surgery are expected to accelerate the deployment of automated and robotic solutions in these centers.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share due to its sophisticated healthcare infrastructure, widespread utilization of robotic-assisted surgery, and substantial investment in advanced medical technologies. Strong hospital capabilities, skilled medical professionals, established reimbursement structures, and major robotics manufacturers support regional adoption. The United States remains the primary contributor, benefiting from high surgical activity, technological advancement, and early implementation of innovative robotic solutions. Growing preference for minimally invasive treatments and continuous improvements in robotic platforms are further supporting the region's dominant position within the healthcare robotics and surgical automation landscape.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR as healthcare systems increasingly adopt robotic technologies and advanced surgical solutions. Rising investments in hospitals, growing demand for minimally invasive procedures, and expanding surgical capacity across China, Japan, South Korea, and India are encouraging deployment. Increasing healthcare spending, demographic changes, improved clinical expertise, and surgeon training are supporting market expansion. Continued innovation, manufacturing capabilities and private healthcare infrastructure are expected to accelerate adoption.

Key players in the market

Some of the key players in Healthcare Robotics & Surgical Automation Market include Intuitive Surgical, Stryker, Medtronic, Johnson & Johnson MedTech, Zimmer Biomet, Smith+Nephew, CMR Surgical, Cornerstone Robotics, Distalmotion, Noah Medical, Moon Surgical, eCential Robotics, Asensus Surgical, THINK Surgical, Renishaw, Medrobotics, Virtual Incision and SS Innovations.

Key Developments:

In February 2026, Medtronic has agreed to acquire CathWorks, an Israeli medtech company focused on the diagnosis and treatment of coronary artery disease, for up to \$585 million. CathWorks is known for its FFRangio technology, which uses advanced artificial intelligence (AI) algorithms and computational science to obtain fractional flow reserve (FFR) measurements of the coronary tree from routine X-ray images.

In September 2025, Stryker and Siemens Healthineers announced a strategic partnership in the field of neurovascular robotics. The collaboration aims to develop a unique robotic system capable of performing a comprehensive range of elective and emergency neurovascular procedures, including treatment for strokes and aneurysms.

Product Types Covered:

Robotic Surgical Systems

Instruments & Accessories

Software & Control Platforms

Services & Maintenance

Surgical Specialties Covered:

General Surgery

Orthopedic Surgery

Neurosurgery

Urology

Gynecology

Cardiothoracic Surgery

Other Specialized Surgeries

Technologies Covered:

Minimally Invasive Robotic Systems

Telerobotics & Remote Navigation

Autonomous & AI-Integrated Systems

Imaging-Guided & Navigation-Assisted Systems

End Users Covered:

Hospitals

Ambulatory Surgical Centers (ASCs)

Specialty Clinics

Academic & Research Institutes

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa
South Africa

Egypt

Morocco

Rest of Africa

What our report offers:

Market share assessments for the regional and country-level segments

Strategic recommendations for the new entrants

Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

Strategic recommendations in key business segments based on the market estimations

Competitive landscaping mapping the key common trends

Company profiling with detailed strategies, financials, and recent developments

Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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