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Global Orthopedics (Joints & Spine) Robotic Assisted Surgery Market, 2025-2035: Focus on Product Type, End User, and Geography

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Abstracts

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This report will be delivered in 7-10 working days.Introduction to Orthopedics (Joints & Spine) Robotic Assisted Surgery Market

Orthopedic (Joints & Spine) robotic-assisted surgery refers to the use of robotic systems and technology to assist surgeons during orthopedic procedures, particularly those related to joint replacements and spine surgeries. This technology helps enhance the precision, efficiency, and outcomes of surgeries by providing surgeons with advanced tools to perform procedures with greater accuracy and minimal invasiveness.

The orthopedic (joints & spine) robotic-assisted surgery market has witnessed remarkable growth and innovation in recent years, as robotic technology continues to transform the field of orthopedic surgery. Robotic-assisted surgeries, particularly in joint replacement and spine surgeries, provide enhanced precision, minimally invasive procedures, and improved patient outcomes, positioning them as a key player in modern orthopedic practices. The market is fueled by the rising prevalence of joint and spine disorders, an aging global population, and the growing demand for advanced, less invasive surgical options.

In 2024, the market is set to experience steady growth, driven by increased adoption of robotic systems in hospitals and surgical centers worldwide. Technological advancements in robotic systems, combined with improved imaging techniques, allow surgeons to plan and execute procedures with unprecedented accuracy, leading to

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better alignment and faster recovery times for patients. By 2035, the market is expected to expand substantially, propelled by ongoing innovations and the increasing affordability of robotic systems, especially in emerging markets. As more healthcare providers adopt robotic-assisted systems and as the technology becomes more cost-effective, the orthopedic robotic-assisted surgery market is poised to play an integral role in the global healthcare landscape, offering enhanced patient care and reduced healthcare costs over time.

Moreover, the increasing adoption of artificial intelligence (AI) and machine learning in robotic systems is expected to accelerate the market growth. These technologies enable enhanced pre-operative planning, real-time decision-making during surgeries, and post-operative monitoring, making surgeries more accurate and less time-consuming. As AI continues to improve, robotic systems will become smarter, allowing for better outcomes and more personalized treatments, which will drive market growth in the coming years.

The increasing prevalence of spinal disorders is expected to drive the growth of the orthopedic robotic-assisted surgery market. A study published by NCBI in October 2022 highlighted that approximately 68.0% of the elderly population experiences Adult Spinal Deformities (ASD). Common causes of spinal injuries, including trauma, falls, collisions, and road traffic accidents, contribute significantly to this issue. The American Association for the Surgery of Trauma reports over 3 million nonfatal injuries annually in the U.S. alone. As the incidence of trauma-related injuries continues to rise, there is an increasing demand for advanced treatment options such as robotic-assisted spinal surgeries, which offer enhanced precision and improved patient outcomes. This trend is expected to further fuel the market's growth throughout the forecast period.

Furthermore, there is an increasing demand for minimally invasive surgeries that reduce hospital stays, minimize tissue damage, and promote faster recovery. Robotic-assisted surgery meets this demand by enabling smaller incisions, less blood loss, and quicker rehabilitation, all of which contribute to improved patient outcomes. For example, in knee and hip replacement surgeries, robotic systems allow surgeons to perform highly precise procedures while preserving surrounding tissues, thus reducing complications and the need for prolonged post-operative care.

However, the high cost of robotic surgery systems poses a significant challenge to the growth of the market. The initial investment required to purchase and install robotic-assisted surgical systems is substantial, often exceeding several million dollars. This significant upfront cost can be a barrier for smaller hospitals, surgical centers, and

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healthcare providers in regions with limited healthcare budgets. Additionally, the need for specialized training for surgeons and staff to operate these systems can add to the financial burden. While robotic-assisted surgery offers long-term cost savings by improving surgical outcomes and reducing recovery times, the high capital expenditure and maintenance costs associated with these systems remain a significant hurdle.

Key players in the orthopedic robotic-assisted surgery market are actively advancing the field through various initiatives and collaborations. For instance, in November 2024, Johnson & Johnson MedTech received approval from the U.S. Food & Drug Administration (FDA) for the investigational device exemption (IDE) of its OTTAVA robotic surgical system. This approval enables the commencement of clinical trials at U.S. sites, marking a significant advancement in robotic-assisted surgical technology. Moreover, Globus Medical acquired NuVasive in an all-stock deal valued at $3.1 billion. This acquisition aims to strengthen Globus Medical's position in the market by integrating NuVasive's technologies and expertise.

Key players in the market are Stryker Corporation, Medtronic plc, Smith & Nephew plc, Zimmer Biomet Holdings, Inc., THINK Surgical, Inc., Globus Medical, Inc., Curexo, Inc., OMNI Orthopaedics Inc. (Corin Group), Johnson & Johnson, and MicroPort Orthopedics Inc., etc.

Market Segmentation:

Segmentation 1: by Product Type

- Systems
- Consumables
- Services

Systems to Lead the Global Orthopedics (Joints & Spine) Robotic Assisted Surgery Market (by Product Type)

The systems segment is set to lead the global orthopedic (joints & spine) robotic-assisted surgery market, driven by the increasing adoption of robotic surgery platforms in hospitals and surgical centers. These systems, which include robotic arms, advanced imaging tools, and control consoles, provide surgeons with enhanced precision and real-

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time feedback during surgeries, particularly in joint and spine procedures. The ability of robotic systems to assist in minimally invasive surgeries, reduce human error, and improve patient outcomes is propelling their dominance in the market.

Segmentation 2: by End User

- Hospitals
- Ambulatory Surgical Centers
- Specialty Clinics

Hospitals to Lead the Global Orthopedics (Joints & Spine) Robotic Assisted Surgery Market (by End User)

Hospitals possess the requisite resources and infrastructure to invest in high-cost robotic systems, positioning them as the primary consumers of robotic-assisted surgical technologies. These institutions are critical hubs for performing complex procedures such as joint replacements and spine surgeries, where the enhanced precision and minimally invasive nature of robotic systems lead to significantly improved patient outcomes. The growing adoption of advanced robotic systems, such as Stryker's MAKO and Zimmer Biomet's Rosa, enables hospitals to achieve superior surgical results, reducing recovery times and minimizing complication rates. This, in turn, enhances patient satisfaction and drives operational efficiencies within the hospital setting.

Segmentation 3: by Region

- North America
- Europe
- Asia Pacific
- Latin America
- Middle East and Africa (MEA)

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North America to Lead the Global Orthopedics (Joints & Spine) Robotic Assisted Surgery Market (by Region)

North America is poised to dominate the global orthopedic (joints & spine) robotic-assisted surgery market, driven by its strong healthcare infrastructure, significant investments in medical technologies, and supportive regulatory environment. Companies such as Stryker Corporation, Medtronic, plc, and Zimmer Biomet are making substantial investments in robotic surgery technologies, with innovations designed to enhance precision and improve patient outcomes. The U.S. healthcare system's adoption of cutting-edge technologies is supported by government policies and incentives that foster the growth of the medical device sector.

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