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Can Med Tourism Industry hit Goldmine with Robot-assisted Surgery?

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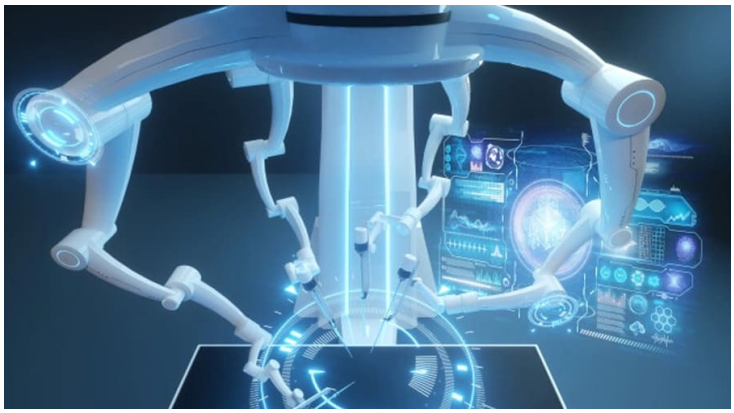
The quality of healthcare is projected to become enhanced in the future, aided by new innovations in technology. Robot-assisted surgery (RAS) has seen significant advancement of late, bringing the promise of much better surgical and post-surgical success rates. In the medical device industry, surgical robots are one of the fastest growing sectors. In addition to providing superior mobility, robotic surgery devices allow surgeons to reach confined spaces and provide extremely advanced imaging capabilities, with better dexterity. Yet, the robotic surgery industry is struggling to thrive in most developing countries. Another interesting trend that's emerging is the increase in medical tourism seeking RAS interventions in the region. Let's explore further.



When compared with conventional laparoscopic and endoscopic techniques, robotic surgery allows intricate and advanced surgical procedures to be performed more precisely and with minimal skin incision.

To achieve maximum precision impact, robot-assisted surgery platforms utilise electrosurgical hardware, instruments, artificial intelligence and data analytics. The robotic surgery minimises tissue damage, pain, and hospital readmissions as it is able to be implanted precisely during the surgery. In addition, with the 3-dimensional visualisation of image (rather than 2-dimensional vision in standard laparoscopy) surgical robotics further eliminates the risk of hand tremors. Advanced models offer voice-activated or manual master controls for demonstrating steady camera motion in addition to ergonomic design and training simulator. Despite the benefits of minimally invasive surgery (MIS), shorter hospital stays, and faster return to normal activities, only about 3 per cent of surgeries are performed robotically in the world.

Technological advancements have even enabled effective remote surgeries by demonstrating the tremendous potential of robotic aids and 5G technology. Surgeons and traumatologists are equitably empowered by the surgical robots technologies.

Kevin Falzon, Senior Business Director, Surgical Robotics at Medtronic (Asia Pacific), states, “RAS has seen significant advancement of late, bringing the promise of much better surgical and post-surgical success rates. Powered by Artificial Intelligence (AI), robotics and a mix of other modern technologies, RAS effectively enables MIS, which means much lesser risks of complications, smaller scars, reduced hospitalisation time, and remarkably expedited recovery time. With RAS, surgeons can prevent surgical errors and speed up procedure times without compromising patient outcomes”.

Reach and scope

Surgical robots are designed to overcome the limitations of MIS, and to improve open surgery outcomes as well. Simulation for robotic surgery has become a very strong area for the surgical science businesses, both in terms of market share and technology. Healthcare and medical educational robotics hold the strongest growth pillars in the surgical robot market.

GlobalData, in its report (2022) on Surgical Robotics Market Landscape, estimates that the surgical robotics market was worth $9.6 billion in 2021 globally and expected to grow across all geographies. North America is the highest revenue-generating market with APAC contributing to 11.5 per cent of the global revenue. A robust growth of the surgical robotics market is expected globally in the next decade. By 2030, it will have grown at a steady CAGR of 6.6 per cent to $17 billion, bolstered by the use of AI, augmented reality, and virtual reality in robotics.

Meanwhile, MarketsandMarkets reports “Surgical Robots Market will be worth $14.4 billion by 2026. North America dominated the surgical robots market, with a share of 63.6 per cent in 2019, while the Asia Pacific region is expected to register the highest CAGR of 18.5 per cent during the forecast period.”

Robots in MIS were driven primarily by the complexity of procedures to treat complex medical conditions. The most commonly used robotic surgical system is known as “da Vinci Surgical System”, manufactured by Intuitive Surgical, Inc. headquartered in California, the US. Intuitive Surgical continues to enjoy the benefits of market penetration, being the first major company producing robotic surgical systems for a large variety of procedures. By applying a MIS approach, this system has been deployed in procedures like prostatectomies, cardiac valve repair, and for renal and gynecologic surgical procedures for the last two decades.. Since its inception in 1995, da Vinci Systems have performed more than 6 million surgeries being the default choice for robotic surgeries.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