Embracing Robotic Assisted Surgery: A New Chapter for Healthcare in Bangladesh. The Opportunity We Shape Carefully

"True medical innovation lies not only in adopting new technologies, but in ensuring they meaningfully improve care where it is needed most."

Robotic Assisted Surgery is often framed as a luxury technology—impressive and expensive. For low- and middle-income countries like Bangladesh, it has long felt distant from everyday clinical reality—until recently. Today s used in many types of operations, including cardiothoracic, colorectal, general, orthopedic, gynecology, and head-and-neck surgery.

Among neighboring countries, India is already performing about 12,000 robotic surgeries annually with more than 500 trained surgeons. Pakistan's Pakistan Kidney and Liver Institute (PKLI) alone has crossed 500 cases, and Nepal installed its first surgical robot in 2024. In Bangladesh, the National Institute of Cardiovascular Diseases (NICVD) performed the country's first robotic-assisted coronary stenting using a trial system in January 2024. Meanwhile, major private hospitals—including Evercare—have applied for approval to install full robotic surgical systems.

Current clinical research and global market trends indicate that Robotic Assisted Surgery is systematically replacing traditional endoscopic and laparoscopic methods, particularly for complex and deep-seated procedures. Evidence from systematic reviews suggests that robotic platforms may reduce conversion to open surgery in selected procedures. For example, in rectal cancer surgery, conversion rates have been reported as low as 3.2% with robotic surgery compared with 14.7% for laparoscopy in some analyses. These superior outcomes are driven by the integration of artificial intelligence, which can help identify critical anatomical structures and guide surgeons during procedures, reducing the risk of inadvertent injury to healthy tissue. In addition, robotic bronchoscopy is instituting "see-and-treat" capabilities, where lesions can be identified, biopsied, and treated in the same session, potentially reducing the need for additional procedures. At the same time, robotic systems may offer ergonomic advantages for surgeons by allowing procedures to be performed in a seated, more controlled environment, potentially reducing the physical strain associated with long operations. Nonetheless, Robotic technology also creates opportunities for tele-mentoring and tele-surgery, allowing surgical expertise to be transmitted across distances without the need for physical travel.

Patient benefits remain central to the increasing adoption of robotic surgery. Compared with conventional open procedures, robotic approaches are often associated with smaller incisions, reduced blood loss, less postoperative pain, and faster recovery, allowing many patients to return home earlier and resume normal activities sooner. In cardiac and thoracic surgery, studies have shown shorter hospital stays, reduced intensive care use, and lower transfusion requirements. Offering such advanced surgical options locally—closer to patients' homes— also reduces the financial and emotional burden families often face when seeking treatment abroad. From a public health perspective, these advantages are particularly meaningful.

Yet we must stay grounded, our ambition to introduce Robotic Assisted Surgery must be guided by thoughtful realism. The initial installation cost—often exceeding Tk 20 crore—along with ongoing expenses for specialized disposable instruments, represents a major investment. As a result, robotic platforms often provide the greatest value in complex procedures- where improved precision, fewer complications, and shorter ICU stays may help to offset the costs. In resource-limited healthcare systems, it is essential that such

technologies ultimately lead to better patient outcomes, greater efficiency, and improved access to care.

Evercare Hospital's upcoming Robotics launch program should therefore be viewed not merely as a technological upgrade, but as a responsibility—to build a sustainable program supported by robust training pathways, outcome monitoring, and a deliberate access strategy. In the best version of this story, such a center could evolve into a national hub for education, research, and advanced clinical capability.
In conclusion, Robotics will not replace surgical judgment or human care. But if implemented with discipline, foresight, and equity in mind, it can help Bangladesh move one step closer to safe, precise, globally benchmarked surgical care—delivered at home.

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