

## Robotic-assisted surgery in Pakistan: its Pros and Cons

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Dear Editor, Robotic surgery, is a state-of-the-art technique that enables surgeons to carry out complex procedures with greater accuracy.<sup>1</sup> The system's purpose was to assist surgeons in doing intricate operations while still doing laparoscopy. The system incorporates 3 basic components namely; is 1. Patient's cart, with robotic arms.; 2. The vision cart incorporated with the hardware to run the system including the camera and the light controls;3. The surgeon's console, a platform where surgeon controls the movements of the robotic arms. All three are linked by fiber optics. Telesurgery is possible, thanks to the network connection of the surgeon's console.

This is how the first robotic surgery was performed, with the patient located in Strasbourg, France, and the surgeon doing the procedure located in the United States.<sup>2</sup> Clinical outcomes for robotic surgery are better than those for conventional laparoscopy; benefits include a lower complication rate, a shorter hospital stay, less post-operative pain, and better aesthetic results. The disadvantage is that training and a committed team are needed. The medical trolley is fairly heavy. The lack of tactile feedback to the surgeon is one of the main disadvantages of robotic surgery. The price of the system, including upkeep, is another barrier.<sup>2</sup> In Pakistan, the Sindh Government Qatar Hospital in Karachi hosted the first DVS system deployment in 2011. But after a few operations, this system did not show the promising outcome, most likely as a result of insufficient experience and technical support. In 2013, the second robotic platform (DVS<sub>i</sub>), which was more advanced and of a higher generation than the first, was placed in the Civil Hospital Karachi.<sup>3</sup> Surgical treatments were started in cooperation with the Sindh Institute of Urology and Transplantation (SIUT), which has performed over 500 operations to date. The effectiveness of this programme has also been effectively aided by the Sindh government, which funds 150 cases each year.<sup>2</sup> A robotic platform costs about Rs 300 million, with the annual maintenance

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contract accounting for 10% of the total cost. The average price due to the sparse usage of tools (10 procedures) is around Rs. 529,310.571.<sup>4,5</sup>

Due high precision and efficiency, robotic surgery could become a game-changer in Pakistan. It provides better visualization to enable surgeons make informed decisions. Being less invasive, reduces scarring and recovery time, requires a shorter hospital stay, and also increases safety by lowering the possibility of human error. On the other hand, its most significant drawback is high maintenance cost and lack of tactile feedback, thereby making it difficult for surgeons to perform. Current shortage of specialized trainers in Pakistan is considered to be one of the risk factors that make patients opt to go abroad.

This issue can be addressed by providing specialized training programmes for surgeons in Pakistan, increasing accessibility by investing in technology, negotiating lower prices with manufacturers, looking into alternative financing options, setting standards for training, certification and conducting research on robotic surgery's efficacy and safety. This approach can also support the identification of best practices, provide information for making policy decisions, and enhance patient outcomes.

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