

Evidence Insight Spotlight

The da Vinci Surgical System

Does the evidence support the Xi's price premium?

What issues does the da Vinci Xi address?

Many iterations of the da Vinci System have been released to accommodate a range of surgical needs. Most recently, the da Vinci Xi was introduced in 2014 to address perceived design shortcomings of its predecessor, the da Vinci Si.

Though these improved features are designed to enhance maneuverability and subsequently improve clinical and operational outcomes, they come at a higher cost.

About the da Vinci Surgical System

The da Vinci Surgical System is a surgeon-controlled robotic platform that uses specialized instruments and a minimally invasive approach to perform complex procedures. It received FDA approval in 2000 and has been used extensively in urologic, gynecologic, cardiothoracic and general surgery.

The da Vinci System's acquisition and reoccurring maintenance costs are high compared to other minimally invasive approaches.

The table below highlights these modifications, along with a summary of the clinical evidence to date.

Da Vinci Xi Modifications and Updates	Implications for Clinical and Operational Outcomes
Slimmer robotic arms with redesigned patient clearance joints to improve maneuverability	<ul style="list-style-type: none"> No demonstrated differences in clinical outcomes
Mobile boom to access patient anatomy without re-docking to improve range of motion	<ul style="list-style-type: none"> No demonstrated differences in clinical outcomes May reduce total operative time in multi-quadrant colorectal procedures; however, this may not be observed across different procedures, and cost savings may only be apparent at high-volume facilities
Laser-guided docking assistance to automatically align robotic arms	<ul style="list-style-type: none"> Leads to reduced docking time; however, this does not significantly reduce total operative time

Conclusion

Demonstrated improvements in clinical outcomes associated with the da Vinci Xi are still needed to justify the large cost difference compared to the da Vinci Si.