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GENERAL SURGERY NEWS

Special REPORT

# Transforming Surgery With the Da Vinci 5 Robotic System

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## Advancing Minimally Invasive Surgery

Surgeons around the globe have performed millions of procedures with the da Vinci Xi® robotic surgical system.[1] Da Vinci surgery has advanced minimally invasive surgery (MIS) in general, cardiac, colorectal, thoracic, urologic, gynecologic, and other surgical procedures, and it yields better patient outcomes for many procedures.[2] A large-scale meta-analysis comparing da Vinci with laparoscopy or video-assisted thoracoscopic surgery across a range of procedures (right colectomy, low anterior resection, total mesorectal excision, prostatectomy, partial nephrectomy, lobectomy, hysterectomy for endometrial and cervical cancer) showed that da Vinci surgery is associated with fewer blood transfusions; a shorter hospital length of stay; and lower rates of 30-day complications, mortality, and readmission across a variety of procedures. Furthermore, it showed that da Vinci surgery is 55% less likely to result in an open conversion.[2]

According to Doug Stoddard, MD, MBA, FACS, a general and bariatric surgeon at CHRISTUS Health in Irving, Texas, “The benefits of da Vinci surgery over laparoscopic and open procedures are no longer a hypothesis but has become a fact. Da Vinci redefines our capabilities as surgeons from a minimally invasive standpoint and completely shifts what is possible. We have this robotic technology with a completely different set of capabilities.”[2] Early in her experience with da Vinci surgery, Laila Rashidi, MD, FACS, FASCRS, a colorectal surgeon at MultiCare Health System in Tacoma, Washington, noticed that she could perform MIS with more precision in more complex cases. “I was able to see how my patients did better with da Vinci surgery,” she said. Similarly, Pamela C. Lee, MD, FACS, FASCRS, a general surgeon at Sharp HealthCare in San Diego, California, could see the potential to improve MIS when she first trained on the da Vinci system. “If I was going to get good at this, I knew I needed to throw all my

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cases on the da Vinci and get as much experience as I could in the beginning stages. The idea that it was only useful for certain cases was wrong. I found the ability to do everything, including intracorporeal anastomoses, hugely advantageous," she said.

In this Special Report, Drs Stoddard, Rashidi, and Lee, along with Paul B. Cesanek, MD, FACS, a general and bariatric surgeon at Lehigh Valley Health Network in Allentown, Pennsylvania, discuss their respective journeys with da Vinci surgery. They explain how they have leveraged the Intuitive ecosystem, integrated intelligence, and advanced instrumentation to enable MIS at their institutions and how the enhancements of the most recent iteration of the da Vinci surgical system could further refine MIS.

## Da Vinci 5®: The Evolution of a Robotic Surgery Platform

The new da Vinci 5 system is a technological and functional leap forward that maintains the functional platform of the fourth-generation da Vinci Xi with new and enhanced features that are designed to enable better outcomes, efficiency, and insights for the future of minimally invasive care (Figure 1).[1] Built from decades of experience, the system has evolved to enhance precision, vision, and control.[1] Da Vinci 5, like the Xi, has a patient cart with boom-mounted architecture, surgeon console, and vision tower; it has 10,000 times the computing power as the da Vinci Xi, which enables the incorporation of artificial intelligence, machine learning, and future innovations.[1] The new system includes Force Feedback technology, enhanced ergonomics, a head-in display menu, and digital arm swap, so surgeons can quickly activate different instruments.[1] "Da Vinci 5 has 150 design innovations," Dr Cesanek said.[1] "Intuitive took everything that was already good on the Xi and made it better, including cameras, visuals, and processing power, then added functionality, such as Force Feedback technology and improved ergonomics."

In addition, the da Vinci 5 features component integration (Figure 2) including an insufflator and generator that enables automatic smoke evacuation, a handheld laparoscopic camera, an endoscope with Firefly® imaging, and digital solutions, which includes Case Insights and the ability to extract objective insights from surgeons to help elevate their skills.[1] "Da Vinci 5 has more capabilities; one of the biggest differences is the integration. With da Vinci 5, you pretty much have full autonomy," Dr Rashidi said.

## Making the Change to Da Vinci 5

Da Vinci 5 is designed for quick incorporation into existing workflows, an assertion supported by all 4 surgeons.[1] "As we grow our programs with da Vinci 5, there is a lot of interchange between da Vinci Xi and da Vinci 5,[1] so we're already familiar with all the instrumentation and the way it's docked," Dr Cesanek said. Dr Stoddard said his transition from Xi to da Vinci 5 was "seamless," adding that "you can operate on da Vinci 5 similarly to how you operate on Xi, which provides a gradual runway to take advantage of the new capabilities." Dr Lee can quickly get her staff up to speed for emergency surgery cases and noted that there wasn't a big learning curve. Dr Rashidi described her learning curve as "very fast" while noting that the transition to da Vinci 5 had also streamlined processes and equipment in the

**Figure 1.** The new da Vinci 5 system is a technological and functional leap forward that maintains the functional platform of the fourth-generation da Vinci Xi with new and enhanced features that are designed to enable better outcomes, efficiency, and insights for the future of minimally invasive care.

operating room (OR). "We eliminated quite a bit from the ORs with da Vinci 5. It's completely different. We've been able to eliminate laparoscopic towers because we no longer need them in every room. The handheld camera is included with da Vinci 5, and we don't need other items like a third-party insufflator, so we have more space. Plus, we now have our key components integrated rather than across different parts of the room," she said.

The optimized features of da Vinci 5 have improved operational efficiency for Dr Lee. "You get into that flow state a lot easier. The visualization is better, and with the head-in display, you can control everything from the console, which is incredibly helpful," she said. "There's more autonomy, which is great because we're not relying on our OR staff as much. The ergonomics are better, with the ability to bring the head-in menu and the display to my eyes in a more neutral posture. On the da Vinci 5, we're taking some console time off our colon resection cases in our early data analysis. Think about all the small instrument exchanges and things that we are not waiting for people to do; even 20 second movement savings add up throughout the case. That's advantageous from the administrator standpoint because more OR minutes are now available."

## Achieving Total Practice[a] Excellence With the Intuitive Ecosystem

The Intuitive unified ecosystem provides surgeons and hospitals with a comprehensive array of resources to help with efficiency and cost containment. The ecosystem also offers training tools for surgeons at all levels of experience, including residents and fellows. "Intuitive offers a variety of courses and training tools to help both experienced and new da Vinci surgeons. You can use their resources to perform a surgery better or to perform it in a different way. Learning additional pathways is always good, particularly when you get thrown a wrench during a case. We also use [these training tools] to get residents and surgeons up and going," Dr Cesanek said. "The Intuitive ecosystem empowers you to guide the surgery and evaluate yourself," Dr Rashidi added. "The components of the ecosystem come together to help us deliver good patient care, and there are so many resources a surgeon can use to gain insights in an objective manner." These resources include a Market Access & Custom Analytics (MACA) team to help health care teams and hospital administrators understand opportunities for improvement and growth; surgical training for learning da Vinci surgery and expanding to new procedures; digital resources that support surgery simulation,[b] video analytics, and insights; and OR telepresence to enable real-time case observation, collaboration, and mentoring.

The ecosystem is not only essential for initiating a new da Vinci program, but it is pivotal for continuous growth and optimization of existing da Vinci programs. Intuitive's Genesis program evaluates programs to make individualized recommendations for efficiency and cost optimization. "We still use Genesis when we change things and want to find ways to be more efficient," Dr Cesanek said. Dr Lee consults with the Genesis team

| A la carte Xi component | Cost, $ |
|---|---|
| Integrated table motion software | 75,000 |
| E-200 generator | 25,000 |
| Third-party insufflator[a] | 35,000 |
| Xi handheld camera | 17,000 |
| Laparoscopic tower | 100,000 |
| Simulator hardware | 100,000 |
| Intuitive Hub | 40,000 |
| My Intuitive+ subscription | NA |

| Da Vinci 5 integrated component | |
|---|---|
| Integrated table motion software | Included |
| E-200 generator | Included |
| Insufflator | Included |
| Handheld camera | Included |
| Integrated tower | Included |
| Simulator | Included |
| Integrated video capture | Included |
| My Intuitive+ subscription (after year 1) | $70,000 |

**Figure 2.** Up to $462,000 value of hardware and software integration is built into the foundation of da Vinci 5.

[a] Surgeon preference.

Internal data on file at Intuitive.

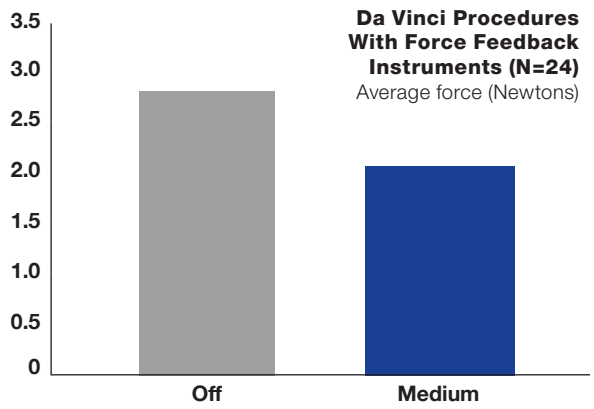
[a] Total da Vinci Practice refers to the transferable value of robotic-assisted surgery with a da Vinci system across procedures in a surgeon's minimally invasive practice. It is at the surgeon's discretion to determine when a patient is a candidate for minimally invasive surgery and whether robotic-assisted surgery with a da Vinci system is an option.

[b] Available with P1.2 software release.

once a year to do a general review of ways to be more efficient. "The Genesis team has gone through things that we don't typically think about," she said. "They may ask, 'Why are you opening this instrument all the time when only 5% of surgeons use it and when there is a cost in getting somebody to clean it and a risk of breaking it during that process?' They look at the workflow of rooms and determine where the da Vinci system should be. The ecosystem provides opportunities for collaboration. We brought our da Vinci program to where it is now by thinking about Intuitive as a partner, not a vendor. If you think about them as a vendor, you're not going to have trust and a collaborative relationship; you're not going to use the ecosystem and everything it has to offer. Once we started thinking about Intuitive as a partner, that's when things opened up."

### *Force Feedback*

Force Feedback technology, available with da Vinci 5, enhances surgical senses, so that surgeons can feel the push-and-pull forces placed on tissue. Force-on-tissue data are provided by Force Feedback technology, which is facilitated by sensors in the patient cart arms and Force Feedback instruments, to the surgeon hand controllers. "As surgeons, we learned open surgery, so you're feeling with your hands; with laparoscopy, we had that feeling with instruments. We have used visual cues with da Vinci surgery," Dr Rashidi said. "I've done over 1,000 da Vinci cases, so I've learned to use my eyes, but now that we have Force Feedback, I learn from my own data. It helps me determine how much force is enough, or how much is too much. Applying less excessive force on tissues could result in a less traumatic operation and hopefully better outcomes for the patient [Figures 3-5]. We're still looking into how Force Feedback can be used to optimize surgery, including how it can be used with training, especially with surgeons who are just starting to perform da Vinci procedures." For Dr Stoddard, the technology heightens awareness during surgery. "It's really a concept of prompts. We've noticed from the preliminary data that surgeons, with that awareness, put less tension on tissue," he said. Indeed, a recent study of Force Feedback comparing High to Off settings for retraction demonstrated up to a



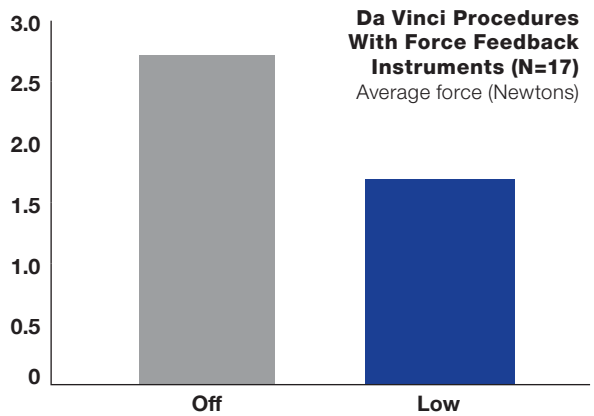

| | Off | Low | Medium | High |
|---|---|---|---|---|
| Average force (Newtons) | 2.77 | 2.33 | 2.08 | NA |
| Minutes in setting | 145 | 473 | 70 | 0 |

**Figure 3.** Dr Stoddard's data showing gentler surgery with Force Feedback technology (25% reduction in force in the "Off" vs "Medium" setting).

The data analysis used My Intuitive Case Reports to compare aggregated force data across procedures. The average force across sensitivity settings is calculated by using a weighted average of the time that force was applied at each setting of all procedures included in the analysis. Force is recorded even when a Force Feedback instrument is in the "Off" sensitivity setting. The data set includes appendectomy, cholecystectomy, cystoduodenostomy, hiatal hernia–paraesophageal, inguinal hernia–unilateral, inguinal hernia–bilateral, and ventral hernia TAPP procedures. Fenestrated Bipolar, ProGrasp, and Cadiere Forceps were included in the analysis. Case report date range is from April 2024 to November 6, 2024. The result presented is an aggregated, qualitative analysis from a single surgeon's early experience with da Vinci 5. Results may vary by procedure type and surgeon experience level.

**NA,** not available; **TAPP,** transabdominal preperitoneal.

Internal data on file at Intuitive.




| | Off | Low | Medium | High |
|---|---|---|---|---|
| Average force (Newtons) | 2.74 | 1.74 | 2.32 | 2.12 |
| Minutes in setting | 19 | 17 | 545 | 100 |

**Figure 4.** Dr Lee's data showing gentler surgery with Force Feedback technology (36% reduction in force in the "Off" vs "Low" setting).

The data analysis used My Intuitive Case Reports to compare aggregated force data across procedures. The average force across sensitivity settings is calculated by using a weighted average of the time that force was applied at each setting of all procedures included in the analysis. Force is recorded even when a Force Feedback instrument is in the "Off" sensitivity setting. The data set includes cholecystectomy, Hartmann's procedure, hemicolectomy–right, incisional hernia IPOM, low anterior resection, rectopexy, other colorectal, and transverse colectomy procedures. Fenestrated Bipolar Forceps were included in the analysis. Case report date range is from April 2024 to November 6, 2024. The result presented is an aggregated, qualitative analysis from a single surgeon's early experience with da Vinci 5. Results may vary by procedure type and surgeon experience level.

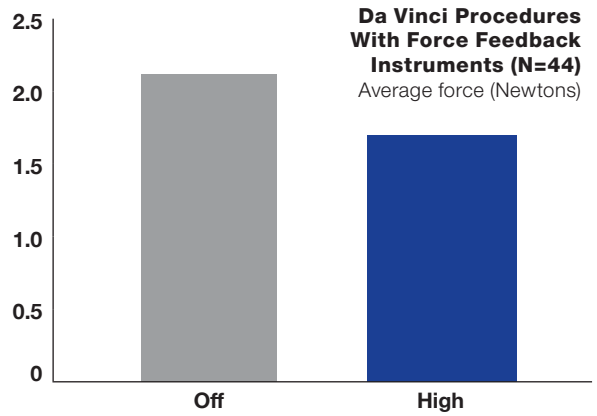
**IPOM,** intraperitoneal onlay mesh.

Internal data on file at Intuitive.

43% reduction in force on tissue.[3] Dr Stoddard continued: "The technology reminds you about the force you're applying. If I'm getting focused and suddenly the Force Feedback pushes back a little, I can adjust. I'll pull the camera back and look. Instead of pulling the whole thing, maybe I'll just change my camera angle and my articulation, so I achieve the view that I wanted without putting unnecessary pressure on the tissue," he said. Dr Cesanek noted that his team has been experimenting with Force Feedback. "When I have it turned 'off,' so that I can't sense it but it's still recording, I'm using about 30% more force. Force Feedback is something surgeons have been asking for, and we're going to see how that translates into procedures and outcomes," he said. "I can do the same surgery and use all the same cues I had on the Xi, but with that additional technology and the feedback later, I can tweak my surgeries."

### *Workflow Efficiencies and More Autonomy*

Da Vinci 5 integrates many components needed for surgery to streamline workflow with an optimized staffing model. The console incorporates innovations for surgeons to control the most commonly used features from an immersive head-in menu display. A simplified setup, enhanced guided tool change, and task automation enhance efficiency. In addition, the console has improved ergonomics and enhanced 3D visualization with truer colors and higher resolution, and smoother hand controllers increase surgeon comfort and aid in career longevity.[1] "Da Vinci 5 has capabilities that are not available on the Xi," Dr Stoddard said. "With the head-in display, I can change insufflation pressure, alter cautery settings, flip the camera, and change my Firefly settings. It's improved our console times." Dr Lee sees firsthand how the features of the da Vinci 5 have streamlined the workflow for techs and OR staff. "We love the guided tool change. The enhanced guided tool change on the da Vinci 5 is so slick. It tells you exactly where the instruments go, which can boost confidence for techs with less experience." She continued: "Everything is pretty much controlled from the console. I'm not relying on our OR staff to constantly get up and change things on the cart. Now, I'm constantly in work mode."




| | Off | Low | Medium | High |
|---|---|---|---|---|
| Average force (Newtons) | 2.11 | 1.32 | 1.89 | 1.72 |
| Minutes in setting | 63 | 10 | 139 | 598 |

**Figure 5.** Dr Cesanek's data showing gentler surgery with Force Feedback technology (18% reduction in force in the "Off" vs "High" setting).

The data analysis used My Intuitive Case Reports to compare aggregated force data across procedures. The average force across sensitivity settings is calculated by using a weighted average of the time that force was applied at each setting of all procedures included in the analysis. Force is recorded even when a Force Feedback instrument is in the "Off" sensitivity setting. The data set includes hiatal hernia–paraesophageal, gastric bypass, cholecystectomy, hiatal hernia–sliding, bariatric revision, sleeve gastrectomy, incisional hernia TAPP, component separation TAR, incisional hernia–TAR, sigmoid colectomy, other general surgery, and lysis of adhesions–isolated procedures. Fenestrated Bipolar and Cadiere Forceps were included in the analysis. Case report date range is from April 2024 to November 6, 2024. The result presented is an aggregated, qualitative analysis from a single surgeon's early experience with da Vinci 5. Results may vary by procedure type and surgeon experience level.

**TAPP,** transabdominal preperitoneal; **TAR,** transversus abdominis release.

Internal data on file at Intuitive.

More surgeon autonomy can make a significant impact in ORs in an era of health care staffing shortages and facilitate the performance of after-hours procedures.[4] "We're all short-staffed," Dr Rashidi said. "You can't always have the most experienced team or your assistant, especially after hours. On da Vinci 5, the surgeon has full control of the settings—insufflation, smoke evacuation, energy—and doesn't depend on who's at the bedside."[1] Dr Cesanek added: "From a staffing standpoint, da Vinci 5 is going to help workflow.[1] In a recent case, I adjusted the insufflation pressures multiple times, changed my cautery settings, and various other things. Having the control to do it myself frees the staff, so they are more efficient at their own tasks."

### *Leveraging Intuitive Digital Solutions*

#### Case Insights

Case Insights uses a combination of da Vinci system data, kinematic movement, and instrument data along with artificial intelligence video analysis to provide insights and identify opportunities for surgeons to improve patient care. "It's a great tool because you get your own video within 30 minutes," Dr Rashidi said. You're able to review your case and teach using the video. It's good for training residents and fellows. Recently, a resident was operating and got into the wrong space, so we reviewed the case and looked at what the resident did, so they could learn from the mistake." In Dr Stoddard's view, this functional advancement opens an entirely new world for surgeons. "Case Insights uses an artificial intelligence platform to mark different points in the case, like the dissection point or closure, so we can skip to those when reviewing the video. It overlays Force Feedback data. It enables us to operationalize data for surgeons to feel better supported," he said. Dr Cesanek has long collected metrics, such as OR times and costs, so he appreciates technological advancements that expand the capacity to capture information to help him improve procedural performance and efficiency. "Intuitive brings a whole different set of data with Case Insights," he said.

#### OR Telepresence

Intuitive Telepresence is a video communication platform that is integrated into da Vinci 5 for real-time collaboration and learning. Surgeries can be live streamed for real-time

case observation and mentoring.[1] "Instead of calling somebody into the OR, we can create an on-demand telepresence session where another surgeon can go into my OR via their laptop, wherever they are. Surgeons can watch each other to help and mentor. It creates a safe environment for surgeons to receive effective synchronous support to benefit the patient," Dr Stoddard said. "A lot of the time, we work in a silo," Dr Lee said. "The nice thing about Intuitive Telepresence is remote case observation. It connects surgeons across the country so we can learn from each other."

## Optimizing Da Vinci 5 Surgery With Data

Da Vinci 5 processes a variety of data viewable with My Intuitive. Surgeons, care teams, and administrators can access the app via a computer or phone for a dashboard of information. With increased computing power, intelligent integration, and new sensors, software, and processors, da Vinci 5 collects and provides more data for actionable insights (Figure 6). "You need to know your data," Dr Rashidi said. "With My Intuitive, I can see not only the outcome but everything from my console time to the instruments I used. I use this data to improve as a surgeon and objectively request something from leadership [Figure 7]." Dr Cesanek sees data as a critical component of surgeon training. "We have a fairly large residency program. With every resident, we have an opportunity to review their cases with data and video, allowing us to provide objective feedback as necessary." According to Dr Lee, Intuitive's unified ecosystem data help drive decision-making to optimize da Vinci surgical programs. "The data piece is super helpful," she said. "The problem is that most hospitals are protective of their data. 'We're not going to share it.' But we like opening up the data and collaborating with the MACA team to look at what meaningful conclusions we can make. Our data team now says, 'We couldn't have done it without collaborating with Intuitive.'" Dr Cesanek agreed: "The MACA data puts it all into context. We see that we're doing a good surgery for the patient. We know they are going home quickly. When you tie it to the financial data, we can see we're being fiscally responsible, providing financial benefit to the health network," he said.

## Conclusion

The new da Vinci 5 robotic system integrates more than 150 design changes for enhanced functionality and greater surgeon autonomy.[1] According to 4 experienced da Vinci surgeons, these innovations may help efficiencies and maximize data insights with the goal to reduce the total cost of care. In addition, the increased processing power and enhanced data analytics open possibilities for future innovations for patient care. "Da Vinci surgery is shifting the paradigm in terms of the expectations for outcomes and quality across the board," Dr Stoddard said, and according to Dr Rashidi, a surgeon cannot get better if they don't have the right tools. "I'm a big believer in atraumatic—not just less invasive—operations. With da Vinci 5, we've come a long way."

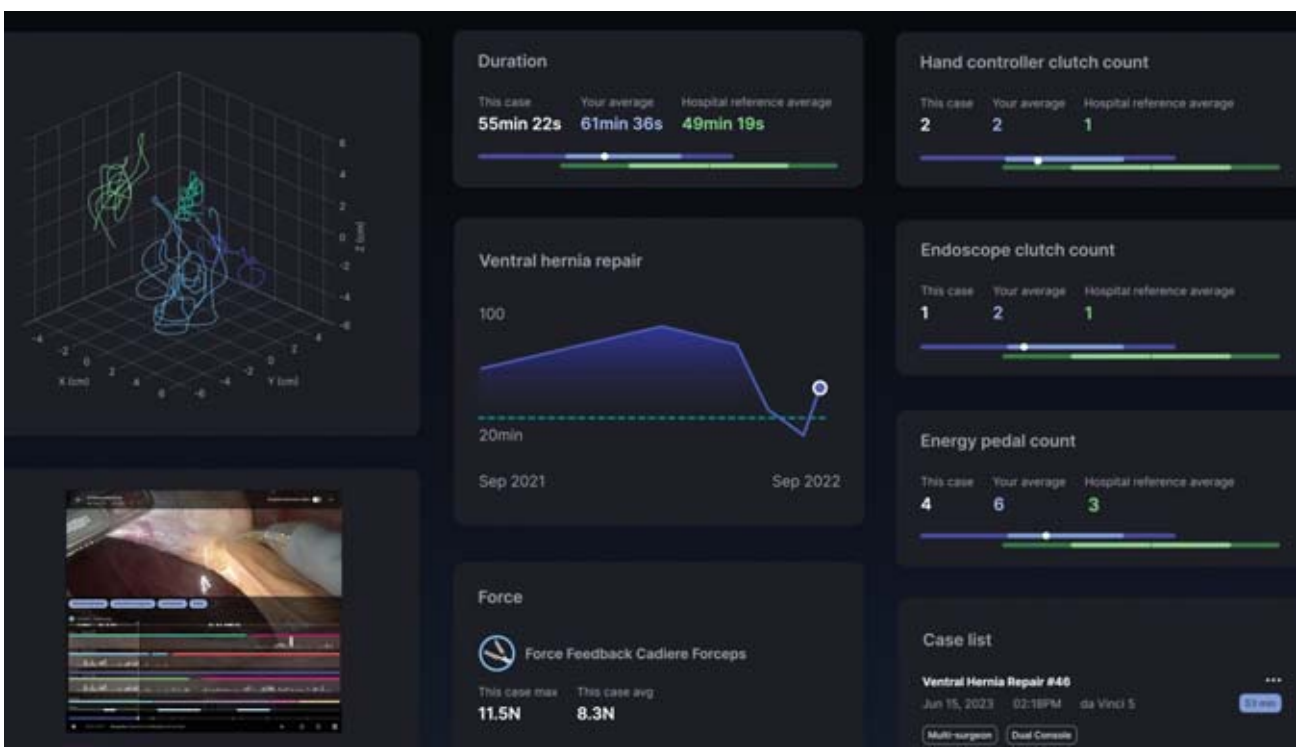



**Figure 6.** Da Vinci 5 collects a wealth of data for actionable insights.

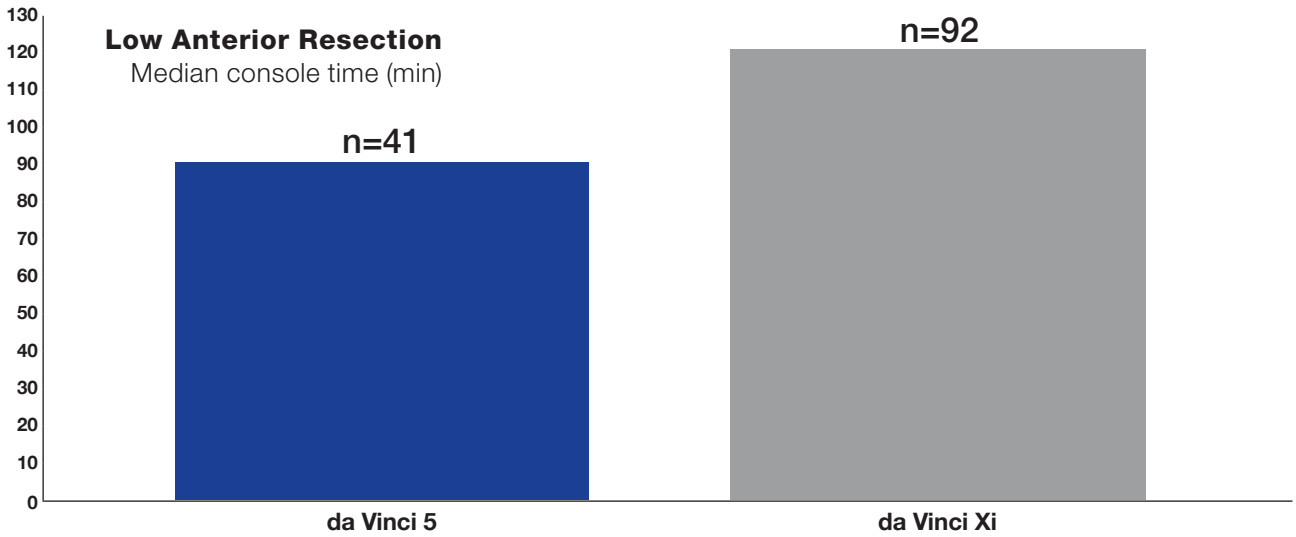



**Figure 7.** Dr Rashidi's median console time data compared with da Vinci Xi showing a 26% savings (32 minutes).

Surgeon console time is from da Vinci system log data. The data analysis compared single-console da Vinci Xi procedures against single-console da Vinci 5 procedures done by the same surgeon at the same facilities. System log data date range is from January 2023 to December 2, 2024. The complexity of the case cannot be deciphered from the da Vinci system log data. Information about concomitant procedures that could influence the console time cannot be extrapolated from the da Vinci system log data. As such, this data presentation should be considered as informational only and not conclusive.

Internal data on file at Intuitive.

## References

1. Data on file at Intuitive.
2. Ricciardi R, Seshadri-Kreadan U, Yankovsky A, et al. The COMPARE study: comparing perioperative outcomes of oncologic minimally invasive laparoscopic, Da Vinci Robotic, and open procedures: a systematic review and meta-analysis of the evidence. *Ann Surg*. Published online October 22, 2024. doi:10.1097/SLA.0000000000006572
3. Awad MM, Raynot MC, Padmanabhan-Kabana M, et al. Evaluation of forces applied to tissues during robotic-assisted surgical tasks using a novel force feedback technology. *Surg Endosc*. 2024;38(10):6193-6202.
4. American Hospital Association. 5 health care workforce shortage takeaways for 2028. Accessed December 26, 2024. www.aha.org/aha-center-health-innovation-market-scan/2024-09-10-5-health-care-workforce-shortage-takeaways-2028

### Disclosures

Dr Cesanek is a consultant to Intuitive Surgical. Dr Lee is on the speakers bureau of Intuitive Surgical. Dr Rashidi is a consultant to and has received research support from Intuitive Surgical. Dr Stoddard has received research support and honoraria from Intuitive Surgical. The material presented represents the views, experiences, and opinions of independent physicians based on their practice and personal experience using Intuitive technology. Their experience may or may not be reproducible and is not generalizable. This article was sponsored and paid for by Intuitive.

### Important Safety Information

Serious complications may occur in any surgery, including surgery with a da Vinci system, up to and including death. Examples of serious or life-threatening complications, which may require prolonged and/or unexpected hospitalization and/or reoperation, include but are not limited to, one or more of the following: injury to tissues/organs, bleeding, infection, and internal scarring that can cause long-lasting dysfunction/pain.

Risks specific to minimally invasive surgery, including surgery with a da Vinci system, include but are not limited to, one or more of the following: temporary pain/nerve injury associated with positioning; a longer operative time, the need to convert to an open approach, or the need for additional or larger incision sites. Converting the procedure could result in a longer operative time, a longer time under anesthesia, and could lead to increased complications. Contraindications applicable to the use of conventional endoscopic instruments also apply to the use of all da Vinci instruments.

For important safety information, including surgical risks and considerations, please also refer to www.intuitive.com/safety. For a product's intended use and/or indications for use, risks, full cautions, and warnings, please refer to the associated user manual(s).

Individual outcomes may depend on a number of factors—including but not limited to—patient characteristics, disease characteristics, and/or surgeon experience.

### Da Vinci 5 Indications for Use/Intended Use

The Intuitive Surgical Endoscopic Instrument Control System (da Vinci Surgical System, Model IS5000) shall assist in the accurate control of Intuitive Surgical Endoscopic Instruments including rigid endoscopes, blunt and sharp endoscopic dissectors, scissors, scalpels, forceps/pick-ups, needle holders, endoscopic retractors, electrocautery and accessories for endoscopic manipulation of tissue, including grasping, cutting, blunt and sharp dissection, approximation, ligation, electrocautery, suturing, and delivery and placement of microwave and cryogenic ablation probes and accessories, during urologic surgical procedures, general laparoscopic surgical procedures, gynecologic laparoscopic surgical procedures and general thoracoscopic surgical procedures. The system is indicated for adult use.

It is intended to be used by trained physicians in an operating room environment in accordance with the representative, specific procedures set forth in the Professional Instructions for Use.

### Contraindication

Use of the force feedback needle driver is contraindicated in hysterectomy and myomectomy due to the risk of vaginal bleeding requiring hospital readmission and/or the need for additional procedures. The use of non-force feedback needle drivers is recommended for suturing in these procedures.

### Precaution for Representative Uses

The demonstration of safety and effectiveness for the representative-specific procedures was based on evaluation of the device as a surgical tool and did not include evaluation of outcomes related to the treatment of cancer (overall survival, disease-free survival, local recurrence) or treatment of the patient's underlying disease or condition. Device usage in all surgical procedures should be guided by the clinical judgment of an adequately trained surgeon.

For risks, cautions, and warnings and full prescribing information, refer to the associated user manual(s).

### Da Vinci Xi/X system

The demonstration of safety and effectiveness for the representative specific procedures did not include evaluation of outcomes related to the treatment of cancer (overall survival, disease-free survival, local recurrence) or treatment of the patient's underlying disease/condition. Device usage in all surgical procedures should be guided by the clinical judgment of an adequately trained surgeon.

### Da Vinci SP system (TORS and URO)

The safety and effectiveness of this device for use in the performance of general laparoscopic surgery procedures have not been established. This device is only intended to be used for single port urological procedures and for transoral otolaryngology surgical procedures in the oropharynx for benign tumors and malignant tumors classified as T1 and T2 with the da Vinci EndoWrist SP Instruments and the da Vinci SP surgical system (SP1098).

### Da Vinci instruments & accessories

It is the responsibility of the owner of the da Vinci surgical system to properly train and supervise its personnel to ensure that the instruments and accessories are properly cleaned, disinfected, and sterilized as required by the user's manual. Da Vinci products should not be used in a clinical setting unless the institution has verified that these products are properly processed in accordance with the da Vinci system user manual.





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