

# MEDICAL MATTERS



## Future of Surgery

Dr. Alex Bauer leads  
McKenzie-Willamette's  
robotic surgery  
program into a new  
era of innovation.



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# Future of Surgery

Dr. Alex Bauer and McKenzie-Willamette collaborate to pursue a Center of Excellence in robotic surgery.

BY VANESSA SALVIA  
FOR LANE COUNTY MEDICAL SOCIETY

**A**t McKenzie-Willamette Medical Center, Dr. Alex Bauer is helping lead a revolution in surgical care through robotics. As chair of the hospital's robotic steering committee and a general surgeon, he's at the forefront of implementing advanced surgical technologies that are transforming patient outcomes and making minimally invasive surgeries more accessible for Lane County's residents.

Bauer represents a new generation of surgeons who trained with robotic systems as part of their standard residency programs, marking a significant shift in surgical education. "When I started my residency, maybe 10% of our gallbladders were done robotically and 90% were done laparoscopically," he explains. "By the end of my five years of training, 90% of gallbladders were done robotically."

This dramatic change wasn't limited to gallbladder procedures. Similar shifts occurred across hernia surgery, colorectal surgery, and other specialties, reflecting the growing recognition of robotic surgery's benefits and its emergence as a new standard of care.





Dr. Alex Bauer sits in one of the operating rooms at McKenzie-Willamette, featuring the da Vinci surgery robot behind him.

### Advancing Our Technology

The robotic platform that is most in use is Intuitive's da Vinci (DV) platform. The DV system has had multiple iterations. "The DV5 is the new model that came out in 2024 and is revolutionizing surgery," he says.

While the technology for the DV surgical system is advanced, Bauer emphasizes that the surgeon maintains complete control throughout the procedure, without the robot performing any autonomous functions. This is an important distinction from some other surgical robots, such as the Mako, which are used in orthopedics.

"The robot isn't necessarily telling us where to dissect or guiding our hands to any specific area," he clarifies. "In its current stage, it's not even telling us 'hey, you're in a danger area' or 'hey, you're in a safe area.' The robot is simply a tool that the surgeon is in complete control of."

### New Surgical Capabilities

There are substantial advantages to this approach. "Compared to open surgery, there is extensive evidence showing less pain and therefore less narcotic use after robotic surgery," Bauer notes. "We see decreased length of hospital stays, decreased surgical site infections, and decreased operative times." The enhanced visualization also reduces the need to convert to open surgery during procedures, maintaining the advantages of minimally invasive surgery.

The new DV5 model introduces groundbreaking capabilities that could further improve surgical outcomes. One of the system's most innovative features is its ability to measure and analyze the forces applied to tissues during surgery. "It now gives the surgeon useful data by measuring the amount of tension that the instruments are placing on tissues over time," Bauer explains.

For instance, if a surgeon performs the same type of procedure on two different patients, the system can compare the average force used in each case, measured in Newtons. This data becomes especially valuable when analyzing post-surgical outcomes.

If a patient develops an infection or an anastomotic leak (where surgical connections fail to heal properly), surgeons can review the force data to determine if there's a correlation with the tension applied during the procedure.

"This allows us to start correlating that data to patient outcomes to determine if we can create models that allow us to improve outcomes based on the force that we're using on the system," Bauer says. This kind of detailed feedback and analysis has never before been available to surgeons, and potentially opens new avenues for improving surgical techniques and standardizing best practices.

**“New tech for the sake of new tech isn't always good... but new tech for the sake of better patient care—that's what my goal is.”**

While the initial cost of robotic surgical systems is substantial, Bauer points out that the long-term benefits make them cost-effective for both patients and healthcare systems. "Readmission rates after robotic surgery compared to laparoscopic or open surgery are lower. Length of hospital stays are lower, and complication rates such as infections or re-operations

are all decreased as well," he explains.

Since joining McKenzie-Willamette in September 2023, Bauer helped grow the hospital's robotic surgery volume, working alongside colleagues in general surgery, gynecology, and urology.

In 2022, McKenzie-Willamette performed just over 100 cases per quarter. From December 2022 to December 2024, McKenzie-Willamette has doubled the volume of robotic surgery in all specialties that they're providing to the community. "I think this is a really big success," Bauer says.

### Center of Excellence

The program is now pursuing designation as a Center of Excellence in robotics, which would make it only the second such center in Oregon. This achievement would reflect not just the surgical team's expertise, but also the comprehensive training and coordination of the entire operating room staff, from certified scrub technicians to anesthesiologists.

The implementation of a robotic surgery program requires more than just training surgeons. "It's the certified scrub tech who is at the bedside performing instrument exchanges with the robot," he says.

"It's also the circulating nurse making robotic supplies available and driving portions of the robot platform. And it's our anesthesiology colleagues learning how to give special medications specific to the robot, such as indocyanine green, and keeping the patient positioning and anesthetic safe throughout," he adds.

Looking to the future, Bauer sees potential for artificial intelligence to complement robotic surgery, while emphasizing that any new technology must prioritize patient care.

"New tech for the sake of new tech isn't always good," he says, "but new tech for the sake of better patient care—that's

what my goal is.” He envisions AI potentially providing real-time feedback about tissue handling or proximity to critical structures, though these capabilities are still likely five to ten years away.

**Finding Community**

When not in surgery, Bauer explores the outdoor opportunities around Lane County with his Bernese mountain dog, Bovie—named after the surgical instrument the Bovie cautery. They can often be found hiking Spencer Butte, Skinner Butte, or trails near his home in the Thurston area’s Mountain Gate neighborhood.

The variety of outdoor activities available, from local buttes to Blue Pool and the McKenzie Bridge area, was one of the draws that

brought him here. “You can choose a new activity every single day after work and get lost in that activity,” he says.

Bauer’s integration into the medical community was strengthened by joining the Lane County Medical Society when he arrived in September 2023.

He appreciates how LCMS brings together providers from different private offices, clinics, and hospital systems under the unified goal of caring for community members. He was particularly struck by the collaborative nature of the local medical community.

“One of my first impressions was how easy and collegial it was for providers in the community to discuss complex topics with each other and grow for the betterment of the patients as a whole,”

he reflects.

For Bauer, who was specifically looking for a positive medical culture during his job hunt, this stood out as a significant location. “Sometimes we can get stuck in this rut of ‘us versus them,’ or this hospital system versus that hospital system, or this surgeon versus that surgeon,” he reflects. “That can get quite toxic in other parts of the country.”

As McKenzie-Willamette’s robotics program continues to grow, Bauer remains focused on his core mission: improving patient care through advanced surgical techniques. His commitment to this goal, combined with the hospital’s investment in cutting-edge technology, promises to keep Lane County at the forefront of surgical innovation.◆

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