

Robotic Surgery

Question

Our hospital purchased a robotic surgical system (RSS). We're looking forward to using it for surgical procedures, but we're also concerned about potential risks. What should we do to prepare?

Answer

When dealing with any new technology, including an RSS, it is always best to assess and examine the risks proactively rather than after an adverse event. Currently, a universal approach to training and credentialing for robotic surgery does not exist. Rather, healthcare organizations are responsible for determining their own standards for clinical training, proctoring and oversight, competency, and credentialing.

In 2022, national robotic surgery experts participated in a consensus conference recognizing the need for standardized robotic surgery credentialing criteria across institutions that promote surgeon proficiency. Their consensus was that privileges for robotic surgery should be given based on a video review of the surgeons' performance and their attainment of clearly defined objective proficiency benchmarks. These experts also specified parameters for ongoing outcome monitoring and defined recommendations for technical skills training, proctoring, and performance assessment.¹

The Agency for Healthcare Research and Quality (AHRQ) recommends that, until well-validated credentialing and training models can be developed, hospitals should require a basic robotic safety curriculum for surgeons performing robotic surgery. AHRQ also recommends that hospitals require surgeons to provide case logs or undergo case proctoring before receiving robotic privileges.² Additionally, the American College of Surgeons notes four principles for learning new procedures and technologies and incorporating them into clinical practice:

1. Mastering didactic content
2. Technical training in an inanimate model

3. Precepted incorporation of the new technique or technology into practice
4. Demonstration of satisfactory patient outcomes.³

If you plan to perform robotic surgery, you and your surgical team should consider — at minimum — these basic risk strategies.

- For each type of procedure you plan to perform, document all physician and staff training and ongoing competency specific to the RSS. Because training from device manufacturers might not prove adequate, consider supplementing the manufacturer’s training and arranging mentorships.
- Collaborate with the anesthesia team to develop screening criteria to identify the best candidates for robotic procedures. Criteria should specify exclusions for patients who might be at higher risk for surgical complications, nerve injuries, or other complications.
- For each potential candidate for a robotic procedure, work with the anesthesiologist to evaluate the patient’s history and physical to identify the risks and benefits of robotic surgery. Choose the conventional approach when indicated based on risk.
- Engage each patient in a thorough [informed consent discussion](#), including a review of the risks, benefits, and alternative treatment options. Document the pertinent details of the informed consent discussion in the patient’s health record. The anesthesiologist also should conduct and document an informed consent discussion with the patient.
- Establish a contingency plan for converting from a robotic procedure to a laparoscopic or open procedure. Be cognizant of, and plan for, any risks that may occur during such a conversion.
- Document in the patient’s health record any special actions taken before, during, or after the procedure that specifically minimized the risks associated with robotic surgery (e.g., patient positioning or special monitoring).

To learn more about risks and safety considerations for robotic surgery, see MedPro’s [Risk Resources: Robotic Surgery](#).

Endnotes

¹ Stefanidis, D., Huffman, E., Collins J. W., Martino, M., Satava, R., & Levy, J. S. (2022, July). Expert consensus recommendations for robotic surgery credentialing. *Annals of Surgery*, 276(1), 88-93. doi: 10.1097/SLA.0000000000004531

² Agency for Healthcare Research and Quality. (2016, February). *Robotic surgery: Risks vs. rewards*. PSNet Web M&M Cases & Commentaries. Retrieved from psnet.ahrq.gov/webmm/case/368/robotic-surgery-risks-vs-rewards-

³ American College of Surgeons. (2018, April 1). *Statement on credentialing and privileging and volume performance issues*. Retrieved from www.facs.org/about-ac/s/statements/credentialing-and-privileging-and-volume-performance-issues/

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