

Robotic surgery in the COVID-19 era: Urologists take on the challenges

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Robotic surgery plays a major role in modern management of prostate cancer, bladder cancer, and other conditions treated by urologists. But it also poses some special challenges as hospitals resume elective surgery amid the COVID-19 pandemic. Problems and solutions facing urologic robotic surgery in the era of COVID-19 are reviewed in *Urology Practice*, an Official Journal of the American Urological Association (AUA).

Medical student Brandee Branche—along with Lance Hampton, MD, Urology Chair and Director of Robotic Surgery, and Riccardo Autorino, MD, Ph.D., Director of Urologic Oncology at VCU Health in Richmond, Va.—outline practical steps to performing robotic urologic [surgery](#) safely and effectively during the pandemic. They write: "At the crux of the matter is the protection of surgical staff and patients, and preservation of optimal surgical technique while adapting to new infectious disease protocols."

Screening, prevention, and perioperative steps for robotic surgery during COVID

Robotic surgery now accounts for most minimally invasive surgical procedures performed by urologists and urologic oncologists, and will be an important priority as healthcare facilities resume non-emergency surgeries. Dr. Autorino and coauthors target key issues and recommended actions for resuming these critical procedures:

- *Patient Screening.* Preoperative screening is recommended for all patients during the pandemic, but screening practices and resources vary widely. Because patients with COVID-19 are asymptomatic at first, simply checking for fever isn't enough—some type of diagnostic test is needed. "Priority tiering" of robotic surgery should be performed, based on the urgency of the procedure. For example, patients with high-risk cancers or active bleeding will be prioritized over those with less-advanced cancers, or those scheduled for reconstructive procedures.
- *Risk of Virus Transmission.* Unanswered questions as to how the Coronavirus spreads pose challenges in preventing transmission during surgery. In addition to respiratory droplets and aerosols, previous research suggests that the virus could potentially be carried in smoke due to the use of electrocautery instruments in robotic surgery. "The anesthesia method should minimize aerosolization of the virus, and negative pressure rooms [isolation rooms] are strongly preferred for COVID-19 positive patients," Dr. Autorino and colleagues write.
- *Perioperative Practices.* The authors address issues related to preparation before entering the operating room, patient positioning, equipment to reduce the risk of gas leakage, and guidelines for operating room filtration systems. Even in patients who have tested negative for COVID-19, "adequate personal protective equipment for the surgical team is essential to protect

patients and health care workers."

- *Surgical Time and Trainee Learning.*

Guidelines for surgery during the pandemic recommend the number of staff members in the operating room be kept to a minimum—although there is some concern this and other infection control measures might lead to longer operating times. As elective procedures are canceled or postponed, innovative approaches will be needed to replace lost training opportunities for urology residents.

The pandemic also brings changes related to informed consent procedures, procedure costs and accessibility, and possible COVID risks during the postoperative period.

Priorities for further research include strategies for prioritizing surgical procedures and the potential for viral transmission in surgical smoke. Future considerations should include whether [robotic surgery](#) consoles should be positioned outside the OR, as this could potentially decrease transmission to the operating surgeon. Dr. Autorino and colleagues emphasize studies will also be needed to confirm any steps to reduce Coronavirus transmission are effective: "While we suggest altering the [operating room](#) environment to err on the side of safety, there must be evidence to sustain such changes in the long run."

More information: Brandee Branche et al.

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