

The Operating Room of the Future

The healthcare industry has always been at the forefront of innovation. Today's patients expect that their hospital will have the latest, most technically advanced solutions to heal and keep them well, both during surgery and recovery. So, just what will leading hospital ORs look like in the future—even the very near future of tomorrow? Which new innovations should hospitals embrace, and what challenges do they need to successfully navigate to keep pace with the competition, deliver exceptional service to patients, and execute on value-based care that payors will demand?



Robotics

While having robots in the OR is nothing new, advances in this area make it critical that hospitals understand the offerings and ensure their staff is trained on the latest hard/software. This is true whether the surgery is happening at your hospital or across the country. While many healthcare professionals are adept at controlling in-room robotics, advances in technology has vastly increased the number of surgeries staff assists with at other locations or even at other times. Surgical robotics can be programmed in advance so they can be put to work in emergency situations when a specialist isn't available on-site.



Digital Imaging

Another technology that continues with break-neck advancements is digital imaging. The ability for surgeons to visualize an area of the patient they cannot see during surgery will be entry-level technology in the Operating Room of the Future. This, coupled with advances in robotics, means surgeons will be able to be more highly specialized and perform surgeries remotely across the globe. It also means that future doctors might have better access to technology during their training than what you currently have at your facility. Ensuring your hospital's OR is updated with the latest technology will help your patients and advance your recruitment efforts to attract top talent.



Focus on Effective Infection Prevention

Patients rely on hospitals to help them heal. However, given patient awareness of infection risks, coupled with increased government and payor efficacy regulations, the need for effective solutions are an increasing focus for hospitals. With the number of reported healthcare-associated infections (HAI) at 1.7 million annually, hospitals are prioritizing investments in this area.

Ultraviolet (UV) disinfection is one of the key tools to significantly decrease HAI. Combining traditional manual cleaning with UVC technology as a "bundled" approach is one of the most effective ways to reduce HAIs. UVC technology uses UV light to penetrate the cell walls of bacteria and viruses and render them unable to replicate. Dangerous pathogens can't reproduce and spread after being treated with UVC energy.

A study conducted in the American Journal of Infection Control found that if a patient had an illness due to a multi-drug resistant organism, then the next patient in that room is significantly more likely to contract that same infection. The most advanced UVC systems can mitigate this risk through innovations including measuring actual UVC dosage received at targeted areas using multiple sensors throughout the room vs. just using time based UVC exposure in an OR. The most advanced UVC system should also automatically capture and report disinfection data in real time, ensuring your IP team has the proof of compliance data it needs for efficacy reporting. Beyond technical advancements, the OR of the Future will be highly user-friendly – a UVC system with pause and reposition features that allow for more direct UVC exposure and higher efficacy throughout the room

environment will help staff ensure IP compliance. A system with additional UVC emitters will help maximize direct UVC light in larger environments like ORs. These innovations can help your hospital minimize HAI and put your facility on the forefront of future ORs.



Voice-controlled Workstations

In tomorrow's OR, surgeons will be able to just say a word and new devices will be able to complete a given movement. Voice control technology will help surgeons stay sterile, as their hands won't have to leave the patient. Contracting an illness from a pathogen in the OR is always a risk factor for any patient. Voice control software is making it possible to mitigate that risk further than today's precautions.



Hybrid ORs

A hybrid operating room includes advances in medical imaging devices that allow for minimally-invasive surgery. The next level of Hybrid ORs will increase the software integration of these devices, for a holistic surgical experience from the OR staff's perspective and shorter recovery times for the patient. Further, data collection from Hybrid ORs will continue to advance, allowing hospital staff and national healthcare groups to better understand processes that lead to better outcomes at lower costs. All data collected during a surgery is used to improve and to create new goals in the advancement of medical knowledge, procedures, and instruction. The ability to use the latest device technologies, coupled with advanced data collection, will ensure tomorrow's ORs continue to perform better with each operation.



Advances in Internet Protocol (IP)

IP allows healthcare information to be securely shared between systems. Essentially, it allows for greater collaboration between healthcare teams and more immediate information transfers during surgery. With the ability for data to be exchanged in real-time, patients in the OR of the Future will have access to better testing, quicker results and better collaboration with leaders in the surgical field. When used effectively, IP can also decrease the risk of mistakes and share data on system-wide best practices more quickly.



Automation

In all areas of our world, automation is replacing manual tasks. Skilled surgical staff will still be responsible for much of what happens in an OR, but the more repetitive tasks are increasingly being completed through automation systems. This allows healthcare professionals to focus on the more intricate, innovative, and rewarding surgical procedures. In the Operating Room of the Future, the move to increased automation will allow for not only more accurate work, but greater opportunities for a completely sterile environment and, therefore, less risk of dangerous HAI. The less external tasks required by surgical staff means less opportunity for contamination. Automated IP systems, including those utilizing UVC, will also ensure that ORs are ready for the next procedure more quickly and with great assurance of IP controls.

The Operating Room of the Future is a concept that will revolutionize surgery, making it minimally invasive with shorter recoveries and little to no complications. The overall goal: extend life for all patients, even those with life-threatening illnesses. All of these elements, along with daily advances in the healthcare field, are going to continue to change the OR dramatically. OR "norms" are going to be replaced and improved, with overall patient wellness being the positive result.