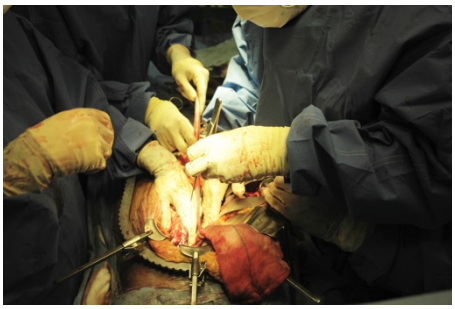
Surgical Technologists Have Many Life-Saving Roles in the Operating Room

Surgical Technologists' Role



Certified Surgical Technologists not only serve as the surgeon's co-pilot and provide instruments and supplies to the surgeon, but they prevent patient death and harm related to medication, surgical fires, instruments and implants, cancer specimens, infection, and bleeding. Surgical technologists are the surgical team member that maintain the sterile surgical field to ensure members of the surgical team adhere to sterile technique to prevent surgical site infections.

As essential surgical team members, surgical technologists must perform very effectively to prevent **"never events,"** including medication errors, surgical implant errors, unintended retained surgical items, patient burns, and incorrect site surgery.

Surgical Technologists Ensure Presence of Instrumentation Needed for Surgery

The surgical technologist sets up the room, not the surgeon. This requires a deep understanding of thousands of instruments in various specialties. Surgeons often enter the room after the patient is asleep. *Adverse events happen when surgical technologists don't have all the needed instrumentation in the room before surgery.*

For example, some spine surgeries have two different approaches and require two completely different sets of instruments. Another example is a surgical technologist might only get the information that the case in an "EEA." Based on that information, they must know it's a neuro and an ENT case and what neuro trays to grab and which ENT trays to grab. There are preference cards, but these are often wrong and not specific to the actual case. New technologies like navigation and robots have also added complexity to case set-up, especially if the robotic case is only partially robotic.

Surgical Technologist Errors in Medication Safety Can Cause Patient Harm and Death

Three very prevalent medications in surgery are heparinized-saline, lidocaine, and epinephrine. Surgical patients have coded when the surgical technologist accidentally hands topical epinephrine to the surgeon for injection. Similarly, patients have coded when a surgical technologist mixes up

heparinized saline with lidocaine. Patients have been blinded when given the wrong medication during surgery. Didactic education and skills lab teach surgical medication and medication safety before students enter the operating room.

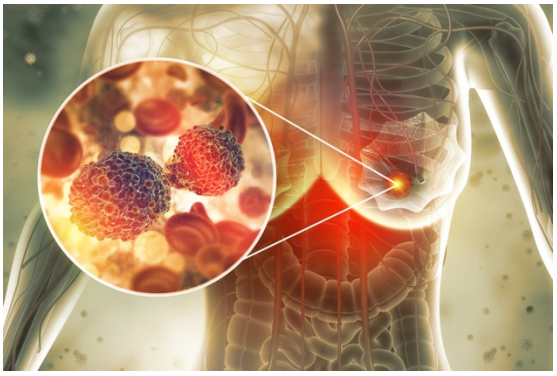
Surgical Technologists Prevent Surgical Fires

One study demonstrated that a quarter of surgeons had witnessed a surgical fire. Surgery creates a high fire risk because supplemental oxygen is often present near ignition sources which are very common in surgery, such as electric cautery. Surgical technologists also play a critical role in preventing surgical fires because they manage electrocautery and lights. A recent study demonstrated that 78% of surgical fires were due to electrocautery (Day et al., 2018).

Surgical Technologists Prevent Patient Harm Related to Instruments and Implants

The surgical technologist manages instruments and implants that can harm patients during surgery. For example, in neurosurgery cases, the surgical technologist assembles drills that go into the patient's brain. The surgical technologist ensures all equipment is correctly assembled to prevent serious surgical errors. Surgeons don't check for correct drill assembly. Surgeons expect surgical technologists to get it right. The surgical technologist also prepares surgical implants like heart valves, artificial hips, knees, and spine implants. Patients have died, for example, when a surgical technologist has mixed the bone cement incorrectly for a knee replacement. It takes a team to make an error like this; it also takes a team to prevent one.

Surgical Technologists Prevent Patient Harm and Death Related to Cancer Specimens



The surgical technologist's ability to manage cancer specimens quickly and accurately can be life or death to the patient, as a mix-up can lead to the wrong cancer treatment. This requires not only mechanical automaticity but also knowledge of medical terminology. Surgeon's place cancer specimens on the surgical technologist's sterile table (the mayo) at an incredibly fast pace. Nurses are not in the sterile field and absolutely rely on surgical technologists to quickly and accurately track and label specimens. Each specialty has about a hundred different names of specimens. It is truly a nightmare situation when a uncertified surgical technologist gets befuddled during cancer specimen cases. The surgeon's visual focus is on the cancer itself, so looking away from the field and helping the surgical technologist compromises care. Also, at this point, the surgical technologist has often already confused specimens.

Surgical Technologists Prevent Patient Harm and Death Related to Sterile Technique

Surgical technologists maintain the sterile surgical field to ensure surgical team members adhere to sterile technique. Sterile technique quickly becomes very complex in some instances, such as breast cancer cases with one healthy breast removed prophylactically, bowel cases, and combined ENT/brain surgeries in which a tumor crosses a boundary.

In its *Action Plan to Prevent Healthcare-Associated Infections*, the US Department of Health and Human Services cited that surgical site infections result in an estimated 13,088 deaths annually and cost hospitals approximately $25,546 per infection.

Surgical Technologists Prevent Patient Harm and Death Related to Bleeding

Automatic reflexes are built with practice during skills lab and clinicals. *The pace and skill of the surgical technologist are vital to patient outcomes during cases with rapid bleeding.*

Surgical Technologists Set the Pace of Surgery

They serve as the surgeon's co-pilot and provide instruments and supplies to the surgeon during surgery, and they must constantly anticipate the surgeon's needs.

No One Supervises the Surgical Technologist Before or During Surgery

The surgeon is not in the room before surgery. Circulating nurses are busy seeing the patient before surgery. During surgery, the surgeons' eyes are on the surgical site. Circulating nurses do not have time to watch surgical technologists. They are busy helping get the patient under anesthesia, setting up surgical equipment, charting, tracking countable items, and preparing for the next case. Surgeons are not near the sterile field or patient during robotic surgery. During robotic surgery, the surgeon is in the robotic console and has no line of sight to the sterile field or patient.

Surgical Technologists' Impact on Healthcare Costs

Surgical technologists significantly impact healthcare facility costs. For example, the Hospital-Acquired Condition Reduction Program incentivizes hospitals to reduce hospital-acquired conditions. If a hospital falls into the top 25% of hospital-acquired conditions for the previous year, then the hospital faces an additional 1% reduction in Medicare reimbursement payments. Many CMS hospital-acquired conditions are surgery related, such as surgical site infections and a foreign object retained after surgery. Surgical technologists play a key role in preventing both.

Surgical technologists also save or cost facilities money by preventing or causing long delays and not throwing away expensive equipment. A single mistake of accidentally throwing away equipment, such as robotic equipment, can cost more than a car. Many non-disposable surgical items look disposable to the untrained eye.

Surgical Technologists Should be Graduates of Accredited Programs and CST-Certified

Because the role of the surgical technologist is vital for patient safety and surgical patient outcomes, all healthcare facilities should require graduation from an accredited surgical technology program and Certified Surgical Technologist (CST) certification by the National Board of Surgical Technology and Surgical Assisting (NBSTSA) for liability protection. CST certification from the NBSTSA demonstrates graduation from an accredited program, mastery of entry-level skills, and current competence. Studies show certification improves patient outcomes, staff morale, and staff retention. The CST is the only credential recognized in every state in the US. In addition, the CST is the only credential recognized by the American College of Surgeons, the national Council on Surgical and Perioperative Safety, the Association of Surgical Technologists, and the Accreditation Review Council on Education in Surgical Technology and Surgical Assisting. The Association of periOperative Registered Nurses' (AORN) qualifications for the scrub role requires surgical technologists (a) graduate from an accredited surgical technology program; (b) Certified Surgical Technologist (CST) certification; (c) Basic Life Support (BLS) certification; and (d) basic computer skills.

Reference

1. Day, A., Rivera, E., Farlow, J. Gourin, C, & Nussenbaum, B. (2018). Surgical fires in otolaryngology: A systematic and narrative review. *Otolaryngology-Head and Neck Surgery, 158*(4), 598–616. https://pubmed.ncbi.nlm.nih.gov/29359618/