

# The Surgical Need – 50 Years of Surgical Technology

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As AST celebrates 50 years this month, it is only natural to ponder about the history of "the tech." How did cultures defer in how a surgery was performed or better yet, what was performed and why? Trephination was believed to be the cure all and "perhaps the first surgery to exist";<sup>3</sup> but historical archives show that this profession was a peppered past of magical tinctures, painful experimentation and new discoveries. Before the operating room even existed, the surgeon and the procedures he performed were seen as heroic.

Greek's Iliad Book XI states that a surgeon "who knows how to cut out darts and relieve the smarting of wounds by soothing unguents was to armies more in value than many other heroes."<sup>3</sup> Gradually the operating room did come into creation, but not to what is available today. Spectacles of barbaric interest took form as the "theatre," and held intrigued viewers that spanned professions even outside of medicine. For what was once a side job for the local barber, surgery held a more prominent intent. From inside the canvas tent of a M.A.S.H. Surgical Unit to the solid white walls of the most technologically advanced OR suite, the field of surgery has continuously maintained a common theme – the surgical need. This one short phrase has established a field that was once revered as borderline evil, to what is now seen at times as one's only hope for survival. Amongst the members of almost any surgical suite, the surgical technologist's beginnings parallel much of the same traits. This profession was established during

#### LEARNING OBJECTIVES

- Examine the last 50 years of the surgical technology profession
- Recall why the role of the scrub tech was created
- List some of the major advancements in surgery over the years
- Learn about when surgical robots were introduced
- Reflect on the scrub tech's past and where it's headed in the future



a critical time in the history of surgery and even more so, the fate of our country.

As the operating room has grown, so has the definition of not only who but what the surgical technologist has become. During the World Wars, the role of the "scrub" began in the battlefield hospitals and Navy ships that defended our freedom. "In World War I and World War II, the U.S. Army used 'medics' to work under the direct supervision of the surgeon. Concurrently, medical 'corpsman' were used in the United States Navy aboard combat ships. Nurses were not allowed aboard combat ships at the time. This led to a new profession within the military called operating room technicians (ORTs)."<sup>2</sup> It was the trials of war that set the ground work to give surgical technology its start. It was a gritty, daring risk to continue the surgical needs of a nation. In 1969, the Association of Surgical Technologists was established by members of the American College of Surgeons (ACS), the American Hospital Association (AHA), and the Association

of peri-Operative Registered Nurses (AORN).1 This critical and longstanding establishment was the foundation that carried the torch and was a daring breakaway from the shadows of the profession's nursing counterparts. The surgical way of doing things has always been to ask the difficult questions and be just curious enough to try. Such can be said as the need for improvement in organ transplant increased and in 1975, a milestone set, the first laparoscopic -assisted organ transplant took place. It was a surgical need sought after to prove that shorter incisions and the creation of minimally invasive surgery even though intricate in nature were beneficial when considering the longterm outcome for the patient.

From the beginning of 1980 to the end of the 1990s, the operating room shed its "old-school" mentality and took a step into the technological age. Computers and the thought of EMR or Electronic Medical Records began to make paper records a thing of the past. Incisions became smaller as new skills in minimally invasive procedures became the new standard. A line in the

sand was beginning to appear between staff that believed in tried and true methods of old and the doctors, nurses and surgical technologists that knew that innovative treatments and procedures were a daring new chapter. As well, surgery became recognized as not only a need but sometimes as a want. In proving this point, Business Insider<sup>5</sup> when referring to the evolution of the last 100 years of surgery states that "With minimally-invasive techniques on the rise, surgery entered the mainstream. The late 1970s and early 1980s saw a booming interest in plastic surgery, as people realized operations could be a form of recreation, not just life-preservation. Breast implants among other body enhancements such as the rise of total joint procedures suddenly made surgery a profitable industry. Instrumentation began to change its appearance from the archaic and sometimes barbaric tools you'd find in dungeons to more delicate and even more microscopic tools meant to advance patient care.

Even though theatre-style operating rooms were a thing

of the past, it wasn't until now that cloth gowns and reusable drapes began to make way for disposable single use products. Infection and improved practices justified the need to change for the betterment of patient care, a continuing and common matter. Then in the late 1980s, a camera was manufactured to attach to the laparoscope, giving the surgical suite an unprecedented look into the human body. Surgical technologists quickly recognized the evolution of computer driven technology and implemented an understanding and appreciation into this part of the profession into curriculum at schools around the nation. In their day-to-day operations, techs continued to push the veins of professional possibilities. Past OR doors and into "back 40" hallways or sterile processing departments, the surgical technologist started to step into administrative rolls as supervisors, managers and coordinators of supply and instrumentation.

As the year 2000 approached, so did the rise of laparoscopic surgery. More and more Americans were experiencing obesity in numbers the country had never seen before.<sup>5</sup> And more and more patients were used weight-loss surgery as a way to remain healthy.

Then in 2000, the Da Vinci robotic surgical system won

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the US Food and Drug Administration's approval. The system is now used in a wide variety of procedures, including prostate surgeries and coronary artery bypass,<sup>6</sup> was a wrist-

manipulated robotic system that emphasized minimally invasive surgery.

Around the same time, the profession of surgical technology began tightening its own regulations and how the advancement into the field was conducted. For a time, on-thejob training or OJT was an easy entry into the world of surgical medicine. Facilities around the country were allowing undertrained and little scrutinized personnel to don a gown and gloves and pass the scalpel. Throughout the 2000s, AST helped to establish legislature to help standardize training, thus strengthening the validity of the surgical technologist. The millennium was a blend of the unknown as clocks threatened to end the world and excitement as that assumption proved false. The OR faced similar challenges; both positive and difficult alike.

While the regulations of the ST profession carried on, advanced minimally invasive procedures and an increased use of laparoscopy, joint replacement and heart valve transplants invited the OR team to think outside the walls of the surgical suite and ask themselves what was next. For a select few, it was surgery ala telecommunication. In 2001, the first telecommunicated laparoscopic surgery between patient and surgeon (New York to France) was performed, and in 2015, the world's first successful face transplant was performed as more than 100 people worked for 26 hours to give the patient a true medical miracle.<sup>5</sup>

More recently a focus in the field has been on 3D imaging, printing and recreating the anatomy of those that need it. How can it be implemented with the computer more into the day-to-day practice, reduce surgical site infections and increase patient outcomes? Augmented reality (AR) also has the potential to be the new normal allowing surgeons to detail the surgeries in ways that was never possible before with computer-based simulations. (JAMA) While it's still in the process of evaluation, it's possible that AR and VR (virtual reality) will not only make surgery safer, but allow for quicker turnover time and less recovery time for the patients.<sup>4</sup> Surgeon Atul Gawande<sup>2</sup> once wrote, "Prognostication is a hazardous enterprise. But if the past quarter century has brought minimally invasive procedures, the next may bring the elimination of invasion."

The role of surgical technologist began as a hope for survival, fraught from war to handle the stressors of OR life. Many of the advancements in preservation, blood management and trauma began much the same way. If it weren't for war, the practice of saving an artery, a nerve or an extremity all together may not be what it is today.

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#### 1. What year was AST (then AORT) formed?

- 1959 a.
- 1969 b.
- 1979 c.
- **d.** 1989

#### 2. When was the first laparoscopicassisted organ transplant?

- 1969 a.
- **b.** 1971
- **c.** 1975
- **d.** 1979

#### 3. The role of the scrub began:

- On US grounds a.
- b. On battlefields
- On Navy ships C.
- Both b and c d.
- 4. A camera was manufactured to attach to the laparoscope in the:
- **a.** 1960s
- **b.** 1970s
- **c.** 1980s
- **d.** 1990s

### 5. In what year did the Da Vinci robotic surgical system win the US Food and Drug Administration's approval:

- **a.** 1991
- 2000 b.
- 2001 C. **d.** 2010
- 6. The world's first successful face trans
  - plant was performed in:
- b.
- c.
- Referencing the previous question, how many people did it take to perform that procedure?
- C.
- d. More than 100

- 8. Telecommunication surgery became an event when a laparoscopic surgery between patient and surgeon happened in what year?
- **a.** 1980
- **b.** 1998

**c.** 2001

- **d.** 2010
- 9. What type of program will allow surgeons to see details in ways they never have before?
- a. X-rays
- **b.** Computer imaging
- c. Augmented reality
- **d.** All of the above

#### 10. How many years is AST celebrating in July?

- **a.** 10
- **b.** 100
- **c.** 150
- **d.** 50

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- 2015 2019
- **a.** 2010

- d. Still hasn't been accomplished

# 7.

- **a.** 50
- 75 b.
- 100