

Surgical Solutions

Residents Lead Hospital-Based Quality Improvement Programs



Surgeon Champion for the National Surgical Quality Improvement Program, Scott Cowan, MD, FACS, (center) works closely with residents Adam Johnson, MD, MPH, and Brock Hewitt, MD, MPH, – both are leading quality based improvement projects during their training.

When the Accreditation Council for Graduate Medical Education (ACGME) mandated residents' involvement in quality improvement initiatives, Jefferson's residents elected to do more than participate. They established Quality Based Improvement Resident Teams (QBIRT) and began taking a leadership role in improving the quality and safety of surgical care at Thomas Jefferson University Hospital.

"Each team decides which quality measure they'd like to better understand and then work to improve," explains Associate Professor Scott W. Cowan, MD, FACS. "Some of the areas they've chosen to tackle include surgical site infections, urinary tract infections and central line-associated bloodstream infections." Some of the teams' projects align with the American College of Surgeons' National Surgical Quality Improvement Program (ACS NSQIP®), giving them access to more data and opportunities for analysis.

One example is the team led by PGY3 resident Adam Johnson, MD, MPH, which is focusing on the high

rate of post-surgical re-intubation and ventilator dependence – that is, reinsertion of a breathing tube and use of a machine to get air into and out of a patient's lungs.

"As residents, we're on the front lines of healthcare delivery and can play an important role in identifying issues and helping design and implement solutions to systematically improve care," says Dr. Johnson. "Postoperative pulmonary complications are luckily very rare but place a heavy burden on our patients and health system. They've been linked to high rates of patient mortality and rising healthcare costs."

Johnson – Jefferson's first Department of Surgery Quality and Safety Fellow as of July 1 – adds that the pathophysiology behind these events is complex and requires coordination among surgeons, anesthesiologists, pulmonologists, nurses and respiratory therapists. His team has analyzed NSQIP data and created a "risk score" to help stratify patients in terms of their risk for one of these two complications.

"The aim is to proactively identify high-risk patients so we can potentially optimize their respiratory status before surgery," explains Dr. Cowan, who serves as Jefferson's NSQIP Surgeon Champion. "With a higher awareness of risk, we may be able to prevent re-intubation and respiratory complications by initiating intra- and postoperative pulmonary interventions in these high-risk patients."

Another team, led by PGY2 resident Brock Hewitt, MD, MPH, is focused on surgical site infections among colorectal surgery patients.

"Our group identified an area where we felt we could have a significant impact on patient outcomes," says Dr. Hewitt. "Using evidence-based interventions, we developed a surgical bundle aimed at decreasing surgical site infections from colon and rectal surgery. Over a six-month period we were able to decrease surgical site infections by nearly 60 percent." The bundle includes preoperative oral antibiotics, changing gowns and gloves before closure and utilizing a surgical closing tray.

"To our knowledge, this is a unique bundle created by this team of Jefferson residents," Dr. Cowan says, adding that the Department will soon expand NSQIP to Methodist Hospital, including implementing the surgical bundle for colorectal patients.

"As a department, we're focused on improving both quality and safety for our patients," Dr. Cowan says. "In the past, there was a 'top-down' approach to quality, with attending surgeons in charge. Now, our residents are very engaged, working directly with our attendings. We're seeing great results."

Surgeon Speaks



In the Department of Surgery, our residents have always been involved in some projects focused on quality and patient safety. With Quality Based Improvement Resident Teams (QBIRT), we've formalized and expanded those efforts – making these initiatives an integral part of our six-year residency.

The Accreditation Council for Graduate Medical Education (ACGME) now requires every resident to be involved in a quality and safety improvement project. Jefferson's Department of Surgery is meeting that requirement by placing each resident on a team that spends several years tackling a quality or safety measure. Our residents are addressing a range of important challenges, and some are already influencing changes in how we deliver care.

For our residents, these experiences are important for building a quality and safety mindset and creating a solid foundation for ongoing contributions throughout their careers as surgeons. Of course, this work is also highly beneficial to our hospital and our patients. Though still relatively new, these projects are already making an impact in terms of understanding challenges, studying possible solutions and translating those into measurable improvements in care delivery.

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