A project directed by the Joint Commission Center for Transforming Healthcare has been shown to reduce surgical site infections (SSIs) in patients undergoing colorectal surgery. Findings suggest that avoiding these SSIs can lead to millions of dollars in cost savings.

Colorectal surgery, one of the most commonly performed major procedures in the United States, has been associated with significant complications, most notably surgical site infections (SSIs). “Reducing SSI rates is a daunting challenge for clinicians and hospitals, but one that must be addressed if we want to make healthcare safer and more reliable for patients,” says Mark R. Chassin, MD, FACP, MPP, MPH. “There are significant opportunities for improving SSI rates in colorectal surgery because there is great variability in performance across hospitals.”

Seeking Solutions for SSIs in Colorectal Surgery

The Joint Commission Center for Transforming Healthcare recently collaborated with the American College of Surgeons (ACS) to conduct a 2.5-year project to find specific solutions to the complex problem of SSIs in colorectal surgery. The program involved seven healthcare systems that volunteered to address these infections as a critical patient safety problem. Cedars- Sinai Medical Center, the Cleveland Clinic, the Mayo Clinic-Rochester Methodist Hospital, North Shore- Long Island Jewish Health System, Northwestern Memorial Hospital, OSF St. Francis Medical Center, and Stanford Hospitals & Clinics participated in the project. SSI outcomes data from the ACS National Surgical Quality Improvement Program were used to guide the improvement effort.
The project addressed preadmission, preoperative, intraoperative, postoperative, and post-discharge follow-up processes for all surgical patients undergoing emergency and elective colorectal surgery; trauma and transplant patients and those younger than 18 were not included. Participating hospitals studied superficial incisional SSIs, deep incisional SSIs, and organ space SSIs. These institutions identified 34 unique correlating variables that increased the risk of colorectal SSIs, including patient characteristics, surgical procedures and processes, and antibiotic administration.

Several targeted solutions were used to reduce superficial incisional colorectal SSIs, including standardizing preoperative instructions to patients and caregivers for applying preoperative skin cleaning products. Specific criteria for the correct management of specific types of wounds were also defined. In addition, many targeted solutions were utilized to reduce all types of colorectal SSIs. These included warming interventions to ensure that body temperature was consistently maintained at the recommended range and weight-based antibiotic dosing protocols to address problems with inadequate antibiotic administration, among other solutions.

**Encouraging Findings on SSI Rates**

Participating hospitals were able to reduce the rate of all types of colorectal SSIs by 32%, from 15.8% to 10.7% (Figure). The rate of superficial incisional SSIs fell by 45%. The average length of stay for hospital patients with any type of colorectal SSI decreased from 15 days to 13 days. Applying the reduction in SSIs achieved in this project to the annual case load of colorectal surgeries at the seven participating hospitals suggests that they will experience 384 fewer SSI cases and save $10.6 million per year as a result of this work.

With this project, it was found that a “one-size-fits all” approach to identifying the most effective ways to reduce colorectal SSIs would not work. “The opportunities to reduce the risk of colorectal SSIs differ from one hospital to another,” says Dr. Chassin. “Our problem-solving methodology focuses each hospital on identifying its most important risks so that it can target interventions most effectively.”

Organ space SSIs were found to be particularly challenging and are a good example of why the one-size fits-all approach doesn’t work. More in-depth investigation into surgical techniques and protocols is being conducted to validate measurement tools and identify factors that can be improved upon to reduce these more severe SSIs.

The hospitals that participated in the Center for Transforming Healthcare project made meaningful progress in learning how to sustain their successes in reducing SSI rates in colorectal surgical patients (Table). “Project participants with the most success shared several key attributes that can serve as lessons for other hospitals and providers seeking similar results,” Dr. Chassin adds.

**Looking Ahead**

According to the Center for Transforming Healthcare, solutions for colorectal SSIs will be added to its Targeted Solutions Tool (TST) throughout 2013 after the lessons and tools from the project are pilot tested in other healthcare organizations. The TST guides institutions to measure performance, identify barriers to excellent performance, and implement proven solutions that are customized to address specific barriers. TST modules are currently available for improving hand hygiene, hand-off communications, and risk of wrong-site surgery.

“Considering the broad impact that SSIs can have on colorectal surgery, the development of the TST for improving care will have an important impact,” says Dr. Chassin. “Hospitals participating in the project demonstrated the importance of continuing to work toward solving this critical surgical care quality issue. As more hospitals and surgeons get engaged, the benefits will be profound for all involved, especially patients.”

**Additional Resources:**


- See more at: http://www.physiciansweekly.com/colorectal-surgery-site-infections/#sthash.e7fWfNoK.dpuf