

# Two quality improvement programs lead to fewer postoperative complications

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Two presurgery checklists from the American College of Surgeons (ACS) Strong for Surgery (S4S) program that incorporate best practices for engaging patients in preparing for their upcoming operations significantly improved lifestyle factors that pose an increased risk for postoperative complications or help support healing and postoperative recovery.

At CHRISTUS St. Michael Health System, Texarkana, Tex., clinicians who used the S4S program were able to increase the number of patients who quit smoking as well as the number of diabetics who achieved better control of blood sugar levels before their operations. S4S was used in combination with a [quality improvement](#) approach that employs the principles of enhanced recovery after surgery. When used together, these two initiatives decreased hospital length of stay, total patient costs, and the overall complication rates, according to researchers who presented these findings at the ACS 2018 Quality and Safety Conference.

Under the leadership of Thomas K. Varghese, Jr., MD, FACS, S4S was originally developed by surgeons across Washington State. In 2017 it became a public health initiative offered by ACS that applies these evidence-based practices to educate patients about steps they may take to help improve [surgical outcomes](#). This free program helps hospitals and clinics in evaluation and planning, process and workflow mapping, and training during and for the first year after implementation so surgeons and surgical staff can integrate checklists into the preoperative phase of clinical practice for elective operations. These checklists screen patients

for potential risk factors that can lead to surgical complications and provide appropriate interventions to ensure better surgical outcomes. Thus far, the checklists target four areas known to be highly influential determinants of surgical outcomes: nutrition, [glycemic control](#), medication management, and smoking cessation. Four new checklists are expected to be released and available to participating hospitals by late July 2018.

In the study presented at the Quality and Safety Conference, use of the S4S program improved glycemic control among patients with poorly-controlled diabetes. Prior to using the program at CHRISTUS St. Michael Health, 87.7 percent of diabetic patients showed blood glucose levels less than 200 mg/dL on the day of their operations. After S4S was in use for six months, the percentage of diabetic patients with proper glycemic control rose to 97.31 percent. This improvement was very important because control of blood sugar by [diabetic patients](#) reduces the risk of fluctuations in blood sugar during surgery and decreases the risk of surgical site infections.

S4S also improved smoking cessation among presurgical patients. According to patient-reported outcomes, 10.5 percent of tobacco users quit smoking before their operations. Smoking is associated with a higher prevalence of [postoperative complications](#), including infections and cardiovascular events.

The S4S program was applied to all 385 patients seen in the hospital's preoperative clinic between July 2017 and January 2018.

Use of an enhanced recovery after surgery approach also led to noticeable quality improvement results. Data on 55 colorectal patients seen during the same time period indicated a decrease in length of stay by 1.5 days and a reduction in costs by an average of \$2,027. In addition, the application of enhanced recovery principles decreased occurrences,

as defined by the American College of Surgeons National Surgical Quality Improvement Program ([ACS NSQIP](#)), by 25 percent.

CHRISTUS St. Michael Health System is a 311-bed community hospital. Its preoperative clinic prepares patients for various procedures performed within the hospital. A multidisciplinary team involving clinical and administrative departments began building an enhanced recovery after surgery program in September 2016 and introduced S4S in May 2017. Both programs have been fully implemented and their principles are built into the work flow of the preoperative clinic.

"Our S4S initiative was easy to implement. The key components for success were having a nurse practitioner work with patients on a consistent basis and getting buy-in from surgeons. The team came to the table when they realized the program would provide patients with a safer journey through the surgery," said Benjamin DuBois, MD, FACS, general surgeon and surgical quality director for CHRISTUS St. Michael Health System.

"The enhanced recovery pathways took a bit of legwork and research to apply basic quality improvement principles and add what we thought was appropriate for our patients. The enhanced recovery program makes sense; it's evidence-based and everyone felt it was the right thing to do," Dr. DuBois added.

The quality improvement programs have been well-received by patients. Study author Dawn Davis, MSN, NP-C, states: "Our patients appreciate that we are investing in the things that they can do to affect their health. As we follow up with information about their [blood sugar](#), smoking, and nutritional status, they do feel someone cares about them and what they do," she said.

Direct nurse-to-patient contact with patients 30 and 60 days after surgery

helps reinforce healthy lifestyles. "During postop calls we receive information about the things we talked about prior to surgery, such as [smoking cessation](#). It's important to have that one-on-one contact with patients," said Vickie Hurst, BSN, RN-BC, manager of the acute care/preoperative clinic and study coauthor.

"There was momentum for both programs because they're evidence based and give us the tools to make a difference in the care of our surgical patients before and after surgery," Dr. DuBois said.

Provided by American College of Surgeons

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