As the Surgical Care Improvement Project (SCIP) reaches its fifth anniversary, a large new study shows mixed results for the SCIP measures. There’s also discussion about what comes next. That could include action by the Joint Commission to weave hospitals’ performance on SCIP core measures into the accreditation process.

SCIP, rolled out in 2005, is a national effort with the goal of reducing preventable surgical complications by 25% by 2010.

The new study, published in the June 23/30 JAMA and involving more than 400,000 patients, showed that boosting hospitals’ adherence with individual SCIP measures such as giving the antibiotic on time before surgery wasn’t associated with a lower postoperative infection rate. But complying with all 6 SCIP infection-prevention measures, taken together, was linked to lower infection rates.

The 6 SCIP infection prevention measures that were in effect during the study period from 2006 to 2008 included 3 prophylactic antibiotic measures, glucose control, appropriate hair removal from the surgical site, and maintaining normal body temperature during surgery.

Adhering to all 6 measures was linked to reducing the likelihood of a postoperative infection from 14.2 to 6.8 per 1,000 discharges, a statistically significant result. But the 3 antibiotic measures scored together were not statistically significant in their association with decreased infections. Nor did the individual SCIP measures make a difference.

Multiple measures matter

Why did multiple measures make a difference, but the individual ones did not?

The lead author, Jonah Stulberg, MD, PhD, MPH, of Case Western Reserve University, Cleveland, thinks it may have to do with a culture of quality.

“When you are getting at multiple procedures—you have to make sure the antibiotic is given within 60 minutes of incision, the hair is removed correctly, and the temperature is controlled appropriately—you have multiple people who have to work together,” he told OR Manager in an interview.

“If you are trying to identify institutions that have really taken on that concept and started to change their processes across the board, then you are able to capture their behavior better with multiple measures.”

The news that the individual measures didn’t make a difference could be discouraging to those who have spent enormous time and resources on improving SCIP performance.

Dr Stulberg says he hopes that’s not the message readers take away.

There could be reasons why the study didn’t show a difference, he notes.
One reason is that care might already have improved before the time period studied. Another is that myriad factors contribute to patient outcomes. Narrowing those into a few process measures may not be adequate to measure quality.

**What has SCIP achieved?**

Dale Bratzler, DO, MPH, of the Oklahoma Foundation for Medical Quality, which manages SCIP for the Centers for Medicare and Medicaid Services (CMS), told OR Manager he was not surprised by the study findings.

“We know that just measuring a limited process of care doesn’t do a good job of measuring hospital performance,” he says. “There are so many things we don’t measure that affect outcomes. That doesn’t mean the process measures aren’t important.”

The good news, he says, is that when all of the SCIP measures were rolled together, hospitals did better. “There was a 15% relative reduction in surgical infection rates, which I thought was a strong finding.”

The study results do not mean SCIP has been a failure, he adds. “I think it has resulted in tremendous improvements nationwide in surgery. We now have 3,600 hospitals actively reporting on surgical quality measures.

“I think many hospitals are doing a lot of other things besides the SCIP process of care measures,” he adds, pointing to surgical checklists and better infection surveillance as examples.

“I think it has created a culture that results in improving quality of care beyond what we are measuring in SCIP.”

**The study’s limitations**

Joint Commission President Mark B. Chassin, MD, MPP, MPH, said the study has a serious limitation because it uses Medicare billing codes to determine whether patients developed infections. The codes, he said, are a “wastebasket” for any infectious complication, not just those related to surgery.

Though the study is “an attempt to get some information,” he told OR Manager, “you can’t conclude from that study that the prophylactic antibiotic measures that are part of SCIP don’t work.”

The same week that the JAMA study was published, Dr Chassin announced that the Joint Commission is considering ways to include performance expectations on certain quality measures in the accreditation process. The commission says it will seek input from hospitals over the next 6 months on the best ways to do this.

The commission says its new approach will help hospitals prepare as Medicare and other payers place more reliance on quality measures in determining reimbursement.

In the June 24, 2010, New England Journal of Medicine, Dr Chassin and his colleagues outline 4 criteria for judging measures to be used for accountability purposes, such as accreditation, public reporting, and value-based purchasing. The criteria include:

1. There is a strong evidence base showing the care process leads to improved outcomes.
2. The measure accurately captures whether the evidence-based care process has, in fact, been provided.
3. The measure addresses a process that has few intervening steps that must happen before the improved outcome is realized.

4. Implementing the measure has little or no chance of adverse consequences.

All 8 SCIP measures that are Joint Commission core measures would meet the criteria, they said. These include the measures for prophylactic antibiotics, blood glucose control, appropriate hair removal, perioperative beta blocker protocol, and venous thromboembolism prophylaxis.

**What’s next for SCIP?**

Work is already underway to develop composite measures that could be used for public reporting for SCIP as well as for acute myocardial infarction, heart failure, and pneumonia, Dr Bratzler notes.

A lot of work is also being done to develop surgical outcome measures, such as mortality, infections, and unplanned returns to the OR.

“Ultimately, that’s what patients care about—getting the best outcome, not necessarily the individual processes of care,” he says.

The challenge, he adds, is that outcome measures have to be risk adjusted, and that requires a lot of data collection. The Centers for Disease Control and Prevention and other investigators are trying to find ways to identify patients who develop complications using claims data.

“We are working toward that—getting measures that don’t require such substantial data collection yet would provide meaningful information for consumers,” Dr Bratzler says.

**When should SCIP measures be retired?**

A big discussion, he says, “Is how long do you have hospitals collect data on measures that are close to being topped out?”

Delivering the antibiotic within 60 minutes of the surgical incision has reached 91% compliance, a big leap from the 56% reported in 2001.

Some hospitals are spending a lot of resources collecting data when there isn’t much room to improve. “One of the concerns I’ve had is that some hospitals are investing huge amounts of resources to get to that top decile of performance, which isn’t always the best thing for patient care,” he says.

“That’s one of the unintended consequences of performance measurement we have to address—the cost of continuing to collect data on measures with little opportunity for improvement.”

CMS in its proposed Inpatient Prospective Payment System rule for 2011 asked for comments on the criteria for deciding when to retire performance measures.

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**References**


60 minutes not magic for antibiotics

Sixty minutes may not be the magic number for giving the antibiotic before surgery to prevent postop infection, according to the JAMA study on the Surgical Care Improvement Project (SCIP) and other research.

Hospitals have strived to meet the SCIP measure for patients to receive prophylactic antibiotics within 1 hour prior to the surgical incision (2 hours for vancomycin).

The original evidence behind the measure examined whether the antibiotic was given at all, not the timing, notes Mary Hawn, MD, MPH, who wrote an editorial accompanying the JAMA study.

Since then, she says, there has been:
• little if any evidence that patients who received the antibiotic more than 60 minutes before the incision had higher infection rates than patients who received it within 60 minutes of the incision
• evidence from 3 studies that antibiotics given 15 to 30 minutes before the incision were associated with higher infection rates than antibiotics given 30 to 60 minutes before the incision.

Pushing to give the antibiotic close to the incision time to comply with SCIP might explain, at least in part, why better adherence with SCIP has not lowered infection rates.

“Proponents of this measure feel that the closer you give it to the time of incision, the better because it will be around longer during the course of the operation. But I think there is some interesting data to provide a good counter-argument to that,” she says.

She adds, “I think there needs to be more discussion of whether we are really doing the right thing for hospitals and for patients by pushing through these measures.”