Surgical Care Improvement Project

Hospitals to report on normothermia

Os are ramping up efforts to keep surgical patients warm. Medicare has adopted an expanded measure on perioperative temperature management as part of the Surgical Care Improvement Project (SCIP).

The new measure, SCIP Infection 10, calls for active warming or normothermia for all surgical patients under general or neuraxial anesthesia lasting an hour or more (sidebar).

Hospitals will need to report data on the new measure to receive their full Medicare payment update in fiscal 2011, as specified in the final 2010 inpatient prospective payment rule posted July 31, 2009. The previous normothermia measure (SCIP Infection 7) was limited to colorectal surgery patients and wasn’t required for public reporting.

Perioperative managers will need to get ready for more data collection, expand patient warming protocols, and decide what equipment to use.

Support for keeping patients warm

There is strong support for keeping patients warm in the operating room. Hypothermic patients are at risk for complications such as acute myocardial infarction, arrhythmias, coagulopathy, and surgical site infections as well as longer hospital stays.

“This is a perfectly reasonable measure that simply rewards people for doing what they should be doing already,” says Daniel I. Sessler, MD, a leading researcher on normothermia. He is the senior author of the 1996 landmark study on the effects of normothermia on surgical site infections (SSIs), which was a leading force behind SCIP Infection 7.

The study showed that a 1.9°C reduction in core temperature tripled the incidence of SSIs after colon resection and increased hospital stays by 20%.

“We showed that maintaining normothermia reduces infection risk by a factor of 3. But even patients who are not at risk for surgical wound infections are probably at risk for other substantial complications of hypothermia,” Dr Sessler told OR Manager.

Meeting the measure

The expanded SCIP measure calls for either normothermia or active warming because “there are some patients who do not stay normothermic even with active warming—so credit is given either for process or outcome,” Dr Sessler notes.

There is a good reason for allowing a core temperature of 96.8°F (36°C) and above within 30 minutes before the end of surgery, he says, noting that “intraoperative temperature monitoring is more accurate than postoperative temperature monitoring.”

Passing the SCIP measure would require a body temperature of 96.8°F (36°C)
C) or more within a 45-minute span (within 30 minutes before the end of anesthesia or within 15 minutes after the end of anesthesia), or use of active warming.

The SCIP measure does not specify how to measure patients’ temperatures or keep them warm.

“If you can keep patients normothermic without using active warming, that’s fine. The rule is not to use some particular method—the rule is to keep people warm. On the other hand, if your patient is becoming hypothermic, you should do something about it, and forced air offers the best combination of efficacy, low cost, and safety,” Dr Sessler says.

Dr Sessler, an anesthesiologist and chairman of the Department of Outcomes Research at the Cleveland Clinic, Cleveland, says he uses forced-air warming on all of his patients. In contrast, he recommends fluid warming only in occasional patients who require large amounts of fluid.

Which thermometer is best?

Dr Sessler recommends oral thermometers for awake patients and esophageal thermometers for anesthetized patients.

A study he and his colleagues published in the August 2009 Anesthesiology found that for noninvasive temperature monitoring, oral and temporal artery methods were significantly more accurate than axillary, forehead skin-surface, forehead liquid-crystal display, and infrared aural canal methods in postoperative patients.

Despite the findings, Dr Sessler does not recommend temporal artery thermometers because they don’t detect hyperthermia or fever.

Oral thermometers are simple to use, fast, and inexpensive.

Gearing up data collection

Good data collection will be key, not only for Medicare reporting but also to keep OR team members aware of how they’re doing, says Gilda Gilbert, RN, MSN, CNOR, SCIP coordinator for surgical services at Winchester Medical Center in Winchester, Virginia. She has developed an Excel spreadsheet for daily normothermia data collection.

“It has taken more than 9 months to tweak the report so it works at top efficiency, and I still am determining where improvements can be made,” she says.

Most of the patient information can be downloaded onto the spreadsheet from surgical services software. But she has to enter some anesthesia data manually, such as ending patient temperature, forced-air warming use, and the temperature measurement method.

She begins collecting data for the 19 ORs at 6:30 am from a central repository for anesthesia records. Data collection takes 45 minutes to 1 hour for the 45 to 55 cases per day. At the end of each day, she analyzes the data and enters the numbers of successes and failures in another spreadsheet that gives the to-date average.

From the data, Gilbert produces a report and circulates it to the stakeholders. She highlights all measure failures—yellow for those below 96.8°F (36°C) who have forced-air warming documented, and red for those below normothermia with no forced-air warming documented.

The data is shared at weekly leadership meetings and posted in the OR for all team members to see.

Sharing data is important, she says. “That way, if one member of the
team says, ‘No, we’re in a hurry. We don’t have time to put the forced air on,’ other members can say, ‘Wait, this is a 2-hour procedure. We’re going to be opening the patient’s core. We need to add an additional warmer.’”

**Turning up the heat**

At Winchester, forced-air warming blankets are used for all cases lasting over 60 minutes. Two warming blankets are used for colorectal surgery patients—1 on top and 1 underneath the patient or a lithotomy blanket—because their scores have not been up to par, notes Gilbert. Warmed IV fluids may be given if more than 3,000 mL of fluid are administered.

Nurses have started putting forced-air warming gowns on patients in the preop holding area. Dr. Sessler notes that prewarming actually increases heat loss in the OR by warming the skin; however, it reduces core hypothermia by reducing the redistribution of heat from the core to peripheral tissues.

Piedmont Hospital in Atlanta began using forced-air warming for all surgical patients in its 18-room OR department in October 2008.

“We thought if it was good for the colon cases, we should aim to warm all of our surgical patients,” says Nancy Flanagan, RN, CNOR, the performance improvement coordinator for surgical services.

Warming was also expanded for ambulatory surgery patients. About 70% of outpatients now receive forced-air warming, says Randall Heitzman, RN, CNOR, clinical manager of the 8-OR Piedmont’s McDonnell Surgical Center and admission testing area.

Piedmont purchased all new oral thermometers for perioperative services to ensure the same temperature measurement method is used preoperatively and postoperatively. Esophageal thermometers are used intraoperatively.

Some patients have forced-air warming applied in the preoperative holding area. Criteria include patients with advanced age, surgery longer than 1½ hours under general or regional anesthesia, pre-existing peripheral vascular or endocrine disease, pregnancy, or open wounds.

The same forced-air warming blanket is used preoperatively and intraoperatively. Preoperatively, blankets are placed longitudinally. During surgery, they are placed horizontally across the chest and arms, says Deborah Slough, RN, BSN, clinical manager of preop holding, PACU, and endoscopy. Foil hats are also placed on patients in the holding area.

**Warmer holding area, ORs**

As an additional measure, the ambient temperature in the preop holding area was raised from 68° to 72° F. Some surgeons have also requested the heat to be turned up in their operating rooms, especially for burn patients and liver transplant patients, who have a great deal of exposure during surgery.

To prevent team members from making the rooms too hot or cold, the engineering department placed a 4° F lockout on the thermostats to keep temperatures in the range of 66° to 70° F.

“It is a challenge to keep it safe for the patient and keep it within a comfort zone for the surgeon,” says Deitra Erickson, RN, CNOR, OR clinical manager. Cooling vests are available for surgeons. They cost about $500 but work well, she notes.
Staying focused

The key to meeting the SCIP measure will be to have all of perioperative services managers working together to keep patients warm, Slough emphasizes. “It is important to reinforce each other daily because it is easy to skip steps when you are in a hurry.” Buy-in by anesthesiologists and surgeons is also essential. The Piedmont nurses say an anesthesiologist and vascular surgeon have been instrumental in championing the warming program to their colleagues.

—Judith M. Mathias, RN, MA

Gilda Gilbert’s sample spreadsheet is in the OR Manager Toolbox at www.ormanager.com

References


Bratzler D. Patient Safety and the Surgical Care Improvement Project. Feb 2, 2009; Presentation at the Colorado Foundation for Medical Care, Englewood. Webinar available at: www.cfmc.org/files/hospital/Great8_SCIP%200209%201%20slide%20per%20page.pdf


SCIP measure: Perioperative temperature management

SCIP-Infection-10

Numerator statement: Surgery patients for whom either active warming was used intraoperatively for the purpose of maintaining normothermia or
who had at least one body temperature equal to or greater than 96.8°F/36°C recorded within 30 minutes immediately prior to or the 15 minutes immediately after anesthesia end time.

**Denominator statement:** All patients, regardless of age, undergoing surgical procedures under general or neuraxial anesthesia of greater than or equal to 60 minutes duration.