Perioperative surgical home optimizes patient care, Part 2

Part 1 of this two-part series, published in the March issue of OR Manager, discussed the perioperative surgical home (PSH) concept. In this article, health-care providers who are in the planning stages of a PSH as well as those with several years of experience with using this model of care will share their recommendations. The goal is to provide helpful insights no matter where the nurse leader is in launching a PSH.

Team effort

Creating a PSH has to be a team effort, according to Zeev Kain, MD, MBA, professor and chair at University of California, Irvine (UCI). Dr Kain is in charge of the PSH at UCI, one of the first in the nation to demonstrate the effectiveness of the concept.

“We had literally hundreds of people involved in this,” he says. At UC Irvine Health, the clinical, medical education, and research enterprises of UCI, the PSH was first implemented with patients undergoing joint replacement surgery and later extended to other surgical lines such as spine surgery, cystectomy, and nephrectomy.

Weekly meetings were held with multiple teams of stakeholders, including nutritionists, case managers, information technology staff, physical therapy, occupational therapy, nurses, surgeons, anesthesiologists, and many others. An important part was helping people through the change process.

“The most difficult part of building a surgical home is not the processes you have to implement, it’s the change,” Dr Kain says. He recommends reading about the eight stages of change outlined in John Kotter’s book, Our Iceberg Is Melting.

He also encourages leaders to involve all stakeholders and reach out to existing resources such as staff in the quality and decision support departments.

“This is a group sport,” he says. “It has to include everybody, and everybody has to work together as a group, and everybody has to have a very clear mission. If there is just one group of people who believe in this, it’s not going to happen.”

Of course, the team needs to have leadership. In the case of Advocate Lutheran in Chicago, where the PSH is in the planning stage, there is a team of leaders: David Young, MD, an anesthesiologist and medical director of presurgical testing at Advocate Lutheran and a partner in Surgical Directions, a consulting firm in Chicago; Mary Kay Bissing, DO, chair of the anesthesia department and primary project champion; Cindy Mayhal-Van Brenk, RN, OR director; and Fleurette Kiokemeister, RN, project manager. “We collaborate with other team members to optimize the patient experience,” Dr Young says.

The team has to incorporate the key elements of the PSH into the perioperative, intraoperative, and postoperative phases (sidebar, p 16). Exploring these processes often reveals a wealth of opportunity.

“Once we took the lid off and thought about how we could reorganize to make the surgery experience more patient centered, there was this whole host of things we could do,” says Kayser Enneking, MD, professor of anesthesiology, who heads up the PSH effort at UF Health Shands, Gainesville, Florida, with Diane Skorupski, MS,
RN, NE-BC, CNOR, associate vice president of perioperative services. The PSH pilot there began in earnest 2 years ago.

**Preoperative planning**

The decision point for surgery on the part of both the surgeon and the patient marks the start of the PSH. Once the decision is made, patients need to be evaluated for surgery, but what sets the PSH apart from standard models of care is a focus on what Dr Kain refers to as “optimizing” the patient for surgery rather than just clearing the patient for surgery.

“It’s not just semantics, it’s a conceptual difference,” he says. For example, if a patient scheduled to undergo spine surgery had a hemoglobin of 9 g/dL 4 weeks before surgery, Dr Kain says, typically a blood transfusion would be ordered. “But a blood transfusion leads to increased costs,” he notes. “Wouldn’t it make more sense to treat the patient’s anemia first?”

Traditionally, patients visit a preoperative clinic before surgery, but Dr Kain calls the approach wasteful. “Healthy patients who are having a simple surgery may not need to be seen in the preoperative clinic,” he says.

At Advocate Lutheran, Dr Young says that, in addition to medical comorbidities, the plan is to assess the patients’ nutritional status. “We want to get a snapshot of where the patient is as far as their overall health,” he says. Having early preoperative contact with the patient is key.

For instance, patients undergoing ileostomy procedures often are readmitted because of dehydration from fluid loss. To prevent readmission, those patients will now have a peripherally inserted central catheter placed before surgery so they can go home and receive IV fluids after discharge.

At the University of Alabama at Birmingham (UAB), another organization that has been a leader in the PSH, most surgical patients are evaluated in the preoperative assessment and treatment clinic, which is staffed by anesthesiologists, nurse practitioners (NPs), and residents.

“We try to identify medical problems that may need to be improved, if possible, before the procedure so we can improve patient outcomes,” says Arthur Boudreaux, MD, professor and vice chair of the department of anesthesiology at the UAB School of Medicine and former chief of staff for UAB Medicine, who refers to the process of prehabilitation.

Based on literature review, UAB has developed algorithms to determine what preoperative tests are needed, such as an electrocardiogram (ECG) or electrolyte panel, which helps eliminate unnecessary testing. The algorithms also help guide medical preparation, for example, how to manage antiplatelet drugs in patients with drug-eluting stents.

Results of the evaluation may sometimes mean putting off surgery. “A patient may have been scheduled in the surgeon’s block time, but it might be better to move the patient 2 weeks later so that nutritional deficits can be corrected,” Dr Boudreaux says. The clinic staff collaborate with the surgeon to make the decision.

Another advantage of the clinic is that patients don’t need to go to multiple departments for tasks such as completing financial forms. “We have finance people in our clinics, and all the precertifications, data entry, and other admission paperwork are handled there,” Dr Boudreaux says.

The PSH places more emphasis on identifying high-risk patients. Without an integrated approach, “we really fail on identifying patients at high risk,” Dr Kain says. He recommends using the American College of Surgeons National Surgical Quality Improvement Program risk calculator.
Dr Enneking and Skorupski say that UF Health Shands uses a grid format to identify at-risk patients. The horizontal lines or “threads” consist of comorbidities and the vertical lines correspond to the complexity of the surgery (low, moderate, or high).

“It’s way to help surgeons organize what they need to do for patients and to help our presurgical clinic,” Dr Enneking says. For example, one of the threads is the patient who is more than 80 years old. If the operation is relatively simple, no testing is required, but if the surgery is more complex, a frailty assessment, nutritional assessment, and ECG would be needed.

Dr Young notes that anticipatory planning includes pain management. “We know that it’s more common today for patients to be on pain meds and antianxiolytics, and we know that those patients have more of a challenge with postoperative pain management,” he says. If these patients can be identified, the anesthesiologist can plan a multimodal therapy approach before surgery to manage pain postoperatively. The plan is for a pain management nurse to see patients preoperatively and develop a pain management plan for the hospital and after discharge.

The PSH approach helps hospitals identify not just medical problems, but social support issues as well. “We can recognize that a joint replacement patient doesn’t have any family support instead of finding out the morning of discharge,” Dr Boudreaux says. The clinic staff can get social services involved before surgery.

“During this preoperative period, you have to start planning the patient’s discharge,” Dr Kain says. For instance, patients receive their planned discharge date so they can arrange for transportation and any durable medical equipment needed after discharge. “You want to create a path for the entire process,” he says.

### Key elements of the perioperative surgical home

Below are the key elements of a perioperative surgical home (PSH), by phase of care. The elements must be linked together into the larger program to truly function as a PSH.

<table>
<thead>
<tr>
<th>Preoperative</th>
<th>Intraoperative</th>
<th>Postoperative (usually from discharge to 30 days postop)</th>
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</thead>
<tbody>
<tr>
<td>Admission through a centralized perioperative area or clinic</td>
<td>Integrated pain management</td>
<td>Integrated pain management</td>
</tr>
<tr>
<td>Early preadmission assessments</td>
<td>Fast-track surgery and discharge home</td>
<td>Early postoperative mobilization by physical therapy and integrated acute care and rehabilitation care</td>
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<tr>
<td>Centralized systems to gather health and other information about patients before hospital admission</td>
<td>Precise fluid management</td>
<td>Improved coordination of care from postoperative to discharge home</td>
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<tr>
<td>A triage system to identify which patients need to attend a preadmission clinic or program</td>
<td>OR delay reduction techniques</td>
<td>Improved discharge protocol</td>
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<tr>
<td>Use of a multidisciplinary team-based clinical care process within the hospital to coordinate complex surgical preparation of patients before surgery</td>
<td>Increased OR efficiency through improved OR flow</td>
<td>Increased patient and caretaker education concerning postdischarge care</td>
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<td></td>
<td>Scheduling initiatives to reduce cancellations and increase efficiency</td>
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Intraoperative care

A hallmark of intraoperative care in the PSH is standardization. “We focus on increased reliability and reduced variance that’s not related to the patient’s condition,” Dr Kain says, citing the example of variations in anesthesia and implants for patients undergoing hip surgery. Standardization includes protocols for anesthesia, optimizing fluid management, minimizing the use of drains and nasogastric tubes, and beginning multimodal pain management.

“We try to standardize how we manage comorbidities such as diabetes in the OR,” Dr Boudreaux says. Some protocols have been developed, and others are in progress. He acknowledges the challenge of agreeing on a protocol but says it’s essential. “Otherwise, everyone is doing it their way, and it confuses staff,” he says.

In a pilot program at UF Health Shands, the preoperative section of the surgical checklist includes the question, “Were there any issues in bringing this patient to the OR today?” Data collected are turned into a Pareto chart that Skorupski and Dr Enneking review, and they then take action as needed. For instance, they may decide to present an identified problem to the surgical governance committee.

At the end of the surgical procedure, Dr Kain says, anesthesiologists use the surgical Apgar score to identify high-risk patients.

Postoperative care and postdischarge follow-up

“Postoperative management in the US is really disjointed,” Dr Kain says. “If you take a typical hospital, no two patients having the same surgery will be managed the same way postoperatively.”

Under the PSH, postoperative care focuses on enhanced recovery after surgery (ERAS), a multimodal approach designed to promote early recovery of patients. An integral part of ERAS is pain management.

“We have an active acute care pain management service run by anesthesiologists,” Dr. Boudreaux says, adding that the service includes NPs, fellows, and residents. “We also provide postoperative comedicial management of patients with the surgeon for some services such as orthopedic.” He adds that comanagement can also be provided by internists or hospitalists.

Most complications after surgery are medically related ones that can be prevented, according to Dr Kain. He says UCI folded the acute pain service staff into the PSH and notes that hospitals might want to consider using physicians on the acute pain service to manage the postoperative phase.

“You first have to extend their training,” he says, citing examples of how to manage medical conditions and pacemakers. Four NPs and a fellow in orthopedic medicine round on patients to monitor progress. He says clinical pathways are built such that the default decision is to do something. For example, nurses know when patients should first get out of bed and don’t have to wait for a physician order.

This phase also includes early removal of drains and catheters, multimodal sedation, early ambulation, nutritional needs, and discharge readiness protocols.

One of the major differences between a PSH and standard care comes after the patient leaves the hospital. Follow-up typically occurs through at least 30 days and includes an individualized recovery pathway.

UC Irvine Health uses what they call a “handshake” to improve coordination of care. “We call the primary care provider and send a perioperative summary that is much more functional based, not just a report on the surgery,” Dr Kain says. That includes a report on the status of comorbidities. Total joint patients are told to call the orthopedic clinic if problems occur after surgery so that staff can guide the patient appropriately.

At UAB, patients currently receive a call, but Dr. Boudreaux says the clinicians are
considering adding a dedicated follow-up clinic. He points to medication reconciliation done before surgery as a valuable technique for reducing readmissions and suggests a pharmacist in the clinic can help with accurate medication reconciliation.

At Advocate Lutheran, the plan is to have patients who are discharged to home receive a visit from a home health nurse during the first 24 hours. The nurse will contact the patient’s primary care provider about any needs. The long-term plan is for daily rounding on patients in skilled nursing facilities to better manage care, facilitate discharge, and cut costs.

It’s important to have additional resources in place to ensure patients meet pre-defined milestones of a particular diagnosis-related group or service line. Milestones include making appointments and assessing whether patients are eating properly and whether their pain is controlled.

**Metrics matter**
Metrics are an integral component of the PSH but not easy to develop. “Metrics are one of the hardest parts of doing process improvement,” Dr Enneking says. As the team develops each part of the PSH, she says, “We look at how the project metrics fit into the overall metrics.”

Dr Young says it’s best to establish metrics early in the process. Advocate Lutheran is tracking turnover time, cost of case, length of stay, 30-day readmissions, patient satisfaction, and surgical site infections.

Skorupski says another example of an effective metric in use at UF Health Shands is preparation defects. “That is an overall metric of how well we have managed the project between the time we decided the patient will have surgery to when the patient arrives in the OR,” she says.

At UAB, a web-based internal dashboard gives real-time feedback on a daily basis, Dr Boudreaux says. And at UCI, physicians and NPs use the dashboard to identify which patients they need to round on.

A robust quality improvement program that incorporates tools such as Lean and Six Sigma helps keep the program on track. “Any improvement program that teaches you about pathways and reducing variability is good,” Dr Kain says.

**Putting the patient in the center**
The PSH is “a way for patients to get what they’re supposed to get based on evidence-based practices, patient safety events are minimized, hospital-acquired infections are minimized, and patients are satisfied and have an experience that meets expectations,” Dr Boudreaux says.

Perhaps the American Society of Anesthesiologists website sums it up best: “Each patient will receive the right care, at the right place, and the right time.”

*Cynthia Saver, MS, RN, is president of CLS Development, Inc., Columbia, Maryland, which provides editorial services to healthcare publications.*

**Reference**

*Diane Skorupski and David Young will be presenters at the OR Manager Conference, October 7-9, in Nashville. Visit www.ormanagerconference.com.*