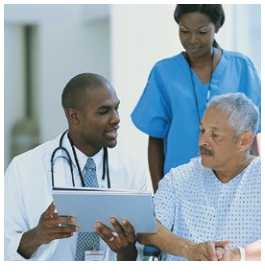
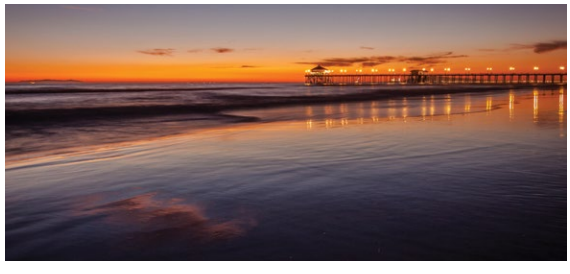
ANNUAL PERIOPERATIVE SURGICAL HOME SUMMIT

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Perioperative Surgical Home 2015 Supplement

PERIOPERATIVE SURGICAL HOME: Meeting Tomorrow's Health Care Challenges

This supplement is a report on the proceedings of the 2nd Perioperative Surgical Home (PSH) Summit that took place in Huntington Beach, California, from June 26-28, 2015. The summit was jointly provided by ASA and the University of California, Irvine Health, and featured expert speakers who offered perspectives on their experiences with their own PSH models and practical techniques for implementation of a PSH at other institutions.

We invite you to explore the many exciting testimonials contained in this publication. The perspectives offered here demonstrate that the PSH is a viable and manageable health care delivery model that is growing at a rapid pace. We hope the success stories shared here will motivate you to consider implementation of PSH elements in your own facilities. Please feel free to contact any of the individuals represented in this supplement for further inquiry.

We hope to hear from you soon and look forward to seeing you at the 2016 PSH Summit in Chicago this summer.

Registration Now Open for PSH Learning Collaborative 2.0
In November 2015, ASA celebrated the completion of its first PSH Learning Collaborative. The initial collaborative brought together 44 health care organizations from across the U.S. to measure the impact of PSH implementation at their institutions. Together, these organizations demonstrated that the PSH has the potential to drive meaningful and lasting change in perioperative care. Due to these initial successes, a second learning collaborative is under way through a partnership with Premier, Inc., and will last two years. Learn more at **asahq.org/psh**.

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EDITORIAL: **Bundled Payments and False Boundaries**

Rapid advances in technology are about to disrupt the American health care landscape. Artificial intelligence, big data, automation, 3-D printing, cloud computing, the Internet of Things and mHealth (mobile health) are just some of the developments that may have potential to change the practice of medicine. It is naïve to think that anesthesiologists will be shielded from these changes. We submit that rather than be entrenched in "protecting our jobs" and "scope of practice," we should look into developments that enhance the value proposition our profession is offering.

One of these developments is the Perioperative Surgical Home (PSH), which is an innovative delivery care model that aims to transform delivery of perioperative care by enhancing clinical quality, improving patient satisfaction and lowering the cost of care.[1] The model aims to break the traditional barriers that currently exist in the delivery of perioperative care between the surgeon's office, pre-admission testing center, preoperative period, intraoperative period, postoperative period, surgical ward and home after discharge.[2] Typically, the multiple health care providers along this continuum don't communicate well with other providers, and this results in multiple silos.[3] The PSH is a physician-patient based model that also aims to significantly reduce system-related variability and focus on optimization of the patient prior to surgery and transition of care after surgery.[1,2]

While early reports provide some evidence for the success of this model,[4-7] ASA is currently leading efforts to disseminate the model and provide evidence for its viability in "real-world situations." Such efforts include the initial PSH Learning Collaborative, the ensuing Learning Collaborative 2.0 (see sidebar at left) and the PSH Summit. The first Summit took place in 2014 and was established by the University of California, Irvine (UCI). The second Summit in 2015 was co-sponsored by UCI and ASA. This editorial does not cover the content of the 2015 Summit but rather focuses on two concepts and their relation to

the PSH. One includes "False Boundaries" and the second "bundle payment."

Susannah Fox, newly appointed Chief Technology Officer of the U.S. Department of Health and Human Services (HHS), recently gave the keynote speech at the AcademyHealth Concordium 2015 meeting in Washington, D.C. Fox mentioned the concept of "false boundaries" and how, for example, these exist between patients and health care providers when it comes down to disease management. That is, how would health care look like if patients had become real partners rather than "passive recipients" of the knowledge coming from health care providers. We submit that similar false boundaries exist in the management model of patients undergoing surgery. This concept of "false boundaries" was coined by Clayton Christensen, the author of The Innovator's Dilemma, in a meeting of SMART Health IT (**susannahfox.com/2014/05/17/false-boundaries-in-health-care**).

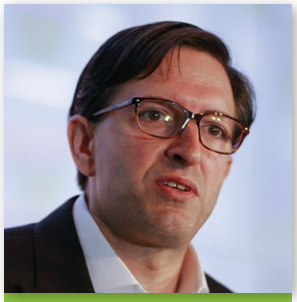
The PSH advocates for the need to break up silos across the continuum of the perioperative period (e.g., preoperative versus postoperative). One of the biggest challenges is false boundaries that exist between the various health care providers across that time period. For example, a challenge to the PSH model is the perception that anesthesiologists belong to the O.R.s and that they should not get involved in the postoperative periods, as those belong to other specialties.[8] Another challenge is the perception that all preoperative issues need to be handled by anesthesiologists with minimal input from other medical specialties, such as hospitalists. In the interest of best patient care, all health care providers should work as a team with one purpose in mind. Indeed, we submit that the false boundaries that currently exist between highly specialized physicians that are being promoted because of political and economical reasons are not beneficial to our patients. It is unfortunate that PSH model implementation across the U.S. is experiencing difficulties because of pushback from various medical specialties as a result of the issue of false boundaries. In the end, we need to provide our patients with the best possible care regardless of which specialty is providing which part of the care – in this way we can avoid further fragmentation of the surgical care for our patients. In other words, it is time for all of us to forget our personal agendas and to focus on what is best for our patients.

As Dexter and Wachtel indicate, much of the viability of the PSH as an innovative care model is dependent on finances.[9] That is, how will we compensate an anesthesiologist who is to resume more responsibilities toward care of the patient? Our health care system is currently undergoing a transition from "volume to value." One element of these transition points is "bundle payment," which is the concept of paying a fixed amount to cover a set of services as an episode of care over a defined period. Indeed, at the current time, most inpatient care in the hospital is very closed to this model, and most hospitals are currently being reimbursed a fixed amount of dollars (with some complexity adjustment) for an episode of care regardless of the cost incurred by that patient (e.g., length of stay). The more complex bundled payment models currently suggested include an entire episode of care from admission to 30 days after discharge and include payment to both the hospitals and the doctors as a fixed amount.[10] For anesthesiologists, this is a very different model and will need a shift in our thinking, which is currently based on the fact that we are paid in 15-minutes increments based on the service we provide. The challenge, of course, in the bundled payment model is how the total payment will be divided between the various health care providers and how this will impact the payment of anesthesiologists. On July 14, 2015, CMS published a proposed rule to establish a Comprehensive Care for Joint Replacement (CCJR) model (**www.federalregister.gov/articles/2015/08/25/2015-20994/medicare-program-comprehensive-care-for-joint-replacement-payment-model-for-acute-care-hospitals**). This rule is an episode-based payment model for lower-extremity joint replacement that would create a single payment across a 90-day episode of care and would apply to 75 Metropolitan Statistical Areas (MSAs).[10] This model is expected to begin in spring 2016 and last for five years. While many see this most recent initiative as a threat to the current model, we submit that this proposal presents a great opportunity for the PSH model to be adopted more widely. That is, under this model, anesthesiologists will no longer have the ability to bill the third-party payer by time units, but rather will be paid based on an internal negotiation process within each health care entity. Under this new proposed rule, the need for the PSH, which calls for reduced costs, is clear, and the need for anesthesiologists to be involved in the PSH model is clear – as long as they want to provide more value to their patients. Indeed, it is likely that the division of the CCJR dollars will be based on the value that each health care provider offers to his or her patients. In this model, anesthesiologists will have a very high incentive to provide as much value as they can across the entire perioperative continuum.

In this editorial, we commented on two concepts that affect the PSH model. While false boundaries across medical specialties hinder PSH dissemination, the CCJR initiative may promote this model across the U.S. Paradoxically, CCJR may in fact break some of the barriers of false boundaries in health care environments.

References avaiable by emailing: j.reid@asahq.org.

KEYNOTE ADDRESS: **Patients Need to Be at Center of New Health Care Models**



"Delivering Leading-Edge and Coordinated Care"

Amir Dan Rubin
Executive Vice President, UnitedHealth Group

The Centers for Medicare & Medicaid Services (CMS) is moving 85 percent of its Medicare reimbursement from a fee-for-service model to a quality- and value-based model in the coming year. To keep up with that change, institutions are updating their treatment approaches, but they should not lose their focus on patients in the transition.

"In the surgical home, we want to leverage standard processes, but we want to treat every person individually. We want the process to be standardized, but we want to adapt to the individual needs of the patient," Amir Dan Rubin said in his keynote address.

Rubin was President and CEO of Stanford Hospital and Clinics and recently became Executive Vice President at UnitedHealth Group. Under Rubin, Stanford became a leader in developing C-I-CARE, a framework to improve patient care. It is ranked number 1 in customer satisfaction among health care in the San Francisco Bay area.

C-I-CARE focuses on four "strategic domains" to improve communication and build relationships with patients: complex care, cross the network (regional care), virtual care and accountable or population care.

"It's the way we communicate to our patients," Rubin said of C-I-CARE. "We call patients by their proper name, we introduce ourselves, we communicate what we are going to do, we ask permission before we do something, we respond to patient needs and anticipate their needs, and we exit courteously and explain what happens next. This seems pretty simple, and in concept it is."

Complex Care

Stanford is renowned as a tertiary care center, but its leaders also wanted it to be renowned for the treatment of patients undergoing complex care. "We have great people who are great technically at delivering care, but did all of our processes come together to deliver a great experience? This is what we're trying to do with the surgical home," Rubin said.

Stanford has a Patient Advisory Committee to collect the insights of patients. It observed patients before and after surgery to design elements for coordinated care from a patient perspective.

"The patients said, 'Coordinate for me.' Care is complex. Who owns the complexity of care? The patient does. Good luck to the patient if they need multi-disciplinary care or second and third opinions," Rubin said. "So, we want to own the complexity. When we saw what patients were dealing with, we wanted to take that on for them."

Network of Care

Increasingly, physicians are moving from independent practice to join larger medical groups. Stanford's network of care is spread over three hospitals, a series of outpatient centers and even more primary care centers, so it set a goal of incorporating "active daily management" to implement best practices across all of the centers.

This led to "Stanford Primary Care 2.0," in which primary care clinics were redesigned so physicians and medical assistants work in a bullpen to treat patients who enter through an outer corridor.

"We found that this takes an hour-and-a-half off their day by matching them with a medical assistant. It keeps everybody co-located, and then during the day, the medical assistant can take on all the prescription refills, all the administrative follow-ups and all the questions about scheduling, whereas our old work flow was a lot of messaging back and forth," Rubin said.

Virtual Care

Stanford developed its own patient portal, which sits on top of its electronic medical record system. The system allows patients to read their charts, and there was an emphasis on being respectful when writing in patient records, he said.

"We found out from the different teams there wasn't much of a shift (in completing records)," Rubin said. "Ideally, what we would like to do is push a message out to the patient portal to say, 'Remember to pick up your prescriptions,' 'Remember to look at your chart' or 'Remember you need to do this before your procedure.'"

The system also expanded "curbside consults," in which primary care physicians consult with specialists, such as sending images to dermatologists for an evaluation. The system also was used to perform eye exams and provide postsurgery care instructions.

Accountable or Population Care

The change in reimbursement from fee-for-service to a quality- and value-based model will be accelerated as CMS shifts Medicare payments. It is expected to lead to an increase in accountable care organizations and bundled payment plans.

"Medicare is pushing out new bundles," Rubin said, adding that under bundled payments, reimbursement for treating comorbidities is lumped in with payment for treating the primary condition. "What if you do a kidney transplant and the person slips and breaks their hip? Is it in the bundle or is it not in the bundle? I think we will start seeing this in some key index surgical cases."

Bundling of payments could be extended to readmissions and other follow-up care and lead to institutions looking to become more efficient in controlling comorbidities and reducing readmissions.

"How can you, in your environment, apply the leading edge of care and how can you do it in a standardized, consistent fashion?" Rubin asked. "Patients want us to show them the way."

"It's the way we communicate to our patients," Rubin said of C-I-CARE. "We call patients by their proper name, we introduce ourselves, we communicate what we are going to do, we ask permission before we do something, we respond to patient needs and anticipate their needs, and we exit courteously and explain what happens next. This seems pretty simple, and in concept it is."

"Implementation of a PSH Model in a Preoperative Clinic"

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Clearance Is Not Enough Anymore: **UC Irvine Preop Clinic Making Changes for the Better**

Dr. Garson and his team at UC Irvine are successfully transitioning to a PSH model, but they have encountered resistance along the way – much of it related to the innate fear of change.

To illustrate how old habits die hard, he presented the audience with surgical clearance forms written on prescription pads.

"For those of you who haven't seen these before, you might ask, 'Come on, Les! Those are old slides. No one does that anymore,'" said Dr. Garson.

Except that the illegibly written, insufficiently notated "forms" were presented to him just weeks before, proving that the practice is alive and well – despite the fact they are of little help to the preoperative clinic staff and insufficient for preparing patients for their perioperative care.

He then cited two large studies that addressed preoperative testing before cataract surgery. A 2000 study involved 18,000 patients and a 2009 study involved 21,000 patients. In each, half of the patients received routine preop testing and the other half no tests at all. In each study, outcomes for both groups were the same.

However, in 2015, a University of California, San Francisco, study found routine tests were still being performed and concluded that these tests were more strongly associated with provider practice patterns than patient characteristics.

"Even with 15 years of good evidence-based literature supporting a change of practice, it has been very difficult to do so," said Dr. Garson.

Triage Changes Everything

Dr. Garson described his clinic's newly created triaging process as their "Do Not Pass Go" card. It started with a preoperative anesthesia questionnaire and then a gridded form that offered a cascade of evaluation and responsibility, based primarily on a patient's ASA Physical Status classification and type of surgery. These simple tools allowed staff to determine whether a patient's chart needed 1) only data entry into the clinic's electronic medical record preanesthesia module or 2) a phone consultation or even a visit to the clinic.

Two years ago, Dr. Garson said it was common for physicians to perform such data entry. But today, medical assistants perform these tasks, which frees up more time for physicians to manage sicker patients.

Communication Critical

Dr. Garson used John Kotter's 8-step change model as a guide for his clinic, emphasizing four main points: 1) Setting the stage, 2) Deciding what to do, 3) Making it happen and 4) Making it stick. The one concept interwoven among each of these sequential steps is effective, persistent communication. When new roles are expected of people, and when you disrupt an old culture in place of a new one, few things are more important than communication.

> "Our patients are expected to be prepared for surgery, recovery and to return as close to their baseline preoperative status as quickly as possible. We believe that by front-loading all this work and preparation into the preoperative time period, we are making a big difference…"

"There's not a day when I'm working in the clinic when I don't talk to the nurses, nurse practitioners, the medical staff and other physicians about how we're changing things, and a sense of urgency."

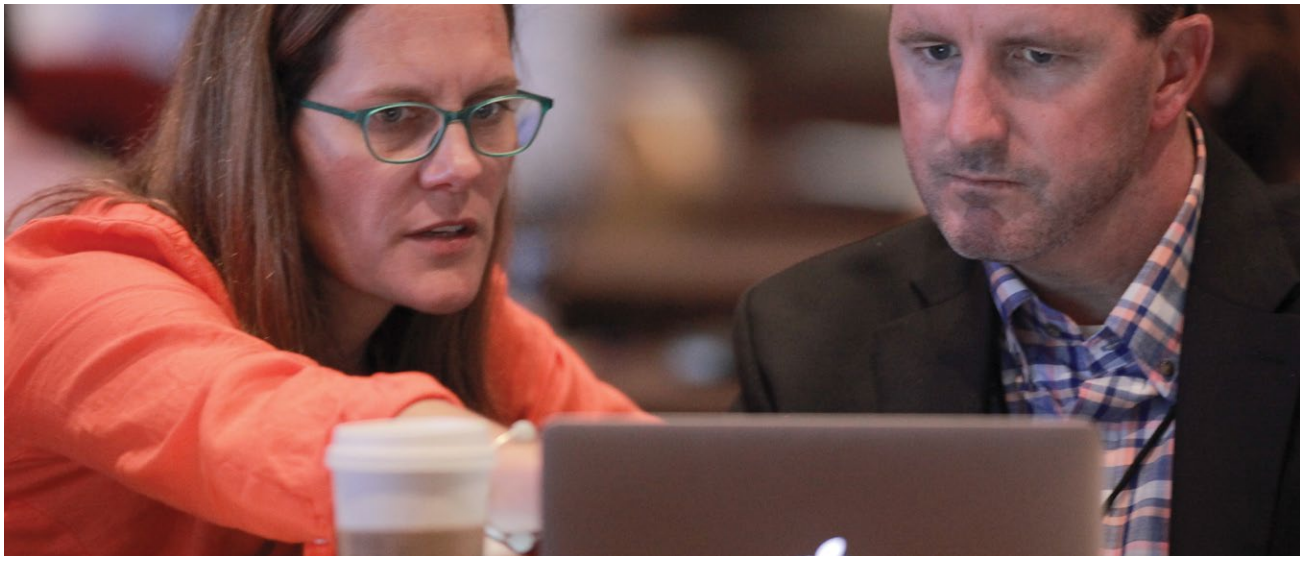
Although success in all the steps of change management are important, perhaps none was more important to Dr. Garson's clinic than "Don't Let Up." After the first successes, when it becomes clear to the staff that things can be done in a better way, press harder and harder – be relentless in instituting change after change until the vision you're communicating becomes the reality, Dr. Garson said.

Patient Engagement

Another important component of Dr. Garson's PSH model is the encouragement of shared decision-making with his patients. Every detail is verified: Does the patient need a wheelchair? Is his address correct? What are her smoking habits?

Those details then become the responsibility of every member of the perioperative team. Dr. Garson's group has begun sharing its PSH optimization checklist with surgical teams. If that team has a conversation with the patient about smoking, the information is relayed to the preoperative clinic for follow up. They also have begun working more closely with physical therapy departments to see how far in advance they can become involved before surgery.

"Our expectations are different – clearance is not enough anymore. Our patients are expected to be prepared for surgery, recovery and to return as close to their baseline preoperative status as quickly as possible," said Dr. Garson. "We believe that by front-loading all this work and preparation into the preoperative time period, we are making a big difference… in decreasing complications as well as postoperative readmission rates, ER visits and ultimately improving patient outcomes and increasing patient satisfaction."



"Michigan Surgical and Health Optimization Program: A Prehabilitation Program Dedicated to Helping Patients Train for Surgery"

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10,000 Steps: **Michigan Surgeon Finds Patient Empowerment to Be Magic Element of Transformative Perioperative Care Model**

"This is essentially why we've been funded by Medicare," said liver transplant surgeon Michael Englesbe, M.D., as he pointed to a slide representing financial and length-of-stay outcomes at his Michigan Surgical Home and Optimization Program (MSHOP). In just three years, the MSHOP helped to reduce payer reimbursement per patient by $8,956 (from $28,333 to $19,377) and decrease median length of stay by two days (from six to four).

Dr. Englesbe's journey into his own PSH model was partially influenced by the remarkably high positive outcomes experienced by even the sickest patients in the state of Michigan.

"How often do massive myocardial events affect outcomes in perioperative care in the state of Michigan?" he asked. "0.1 percent. One in 1,000. It's not a huge impact. But how much time do we spend trying to identify those patients? A lot."

Dr. Englesbe and his colleagues understood that optimizing care and best-utilizing his facility's resources required focusing on patient care in new ways.

Empowering the Patient

MSHOP team members developed a "prehabilitation" program that places the patient in the driver's seat from the beginning to the end of their perioperative journey. Prehabilitation focuses on four areas of improvement for which the patient was primarily responsible:

- Move: Increasing physical activity
- Breathe: Breathing exercise/smoking cessation
- Eat: Healthy eating before surgery
- Relax: Stress reduction

Alongside these four areas of improvement were a simple risk-assessment tool and a patient tracker, all packaged in an easy-to-use education kit. The risk-assessment tool can be completed in just over 10 seconds. Patients are then enrolled in a simple online tracking system that monitors activities related to the four areas. After a lot of experimentation, phone texts were found to be the best way to engage patients in their perioperative care.

And Then the Magic Happened

The MSHOP has only been operational for three years and has involved approximately 800 general surgery patients. But its success has been almost unanimous. Dr. Englesbe was the recipient of a $6 million grant from CMS, and 25 pages of survey data of MSHOP patients have been compiled without a single negative comment. Every patient participant reacted positively to the program, with some referring to it as a "transformational" experience.

"Here's the magic…" said Dr. Englesbe. "I'm not sure any of these things individually [four areas of improvement] matter at all, but I think what it does is it changes the context of the surgical journey to empower the patient. Patients own this event and they own the outcomes. They feel the University of Michigan, and now hopefully the state of Michigan, cares about them and is engaged in their care."

"I have been to about nine or 10 initiation site visits, and 95 percent of the clinicians in the room are anesthesiologists. I think the anesthesiologists are going to 'own' the perioperative product."

Teachable Moments

There were occasional roadblocks to the MSHOP. But these often led to important learning experiences and sometimes unexpected insights. Early on in the program, they realized the importance of giving patients a specific operative date, thus allowing them a predetermined time frame to prepare.

“We learned this the hard way,” said Dr. Englesbe. “You have to say, ‘You have colon cancer. We’re taking out your colon on August 15. We have 47 days … and this is what we’re going to do.’ You have this teachable moment when they’re terrified, and compliance is very high. You have to take advantage of it!”

Such clarity in communication led to positive results. Among MSHOP patients, 12 percent were identified as smokers. However, 90 days after surgery, only one person continued to smoke, a result attributed to clear goals and consistent patient empowerment.

“This was a huge transition for me as an academic,” he said. “Not to focus on the mechanistic domain of this… but just to see that it works. It really does.”

Dr. Englesbe shared the story of a 67-year-old diabetic man undergoing a kidney transplant. He closely followed the man’s progress through the MSHOP and noted that he had completed 10,000 steps the day before surgery and commended him for his diligence, which helped to contribute to a successful surgery and recovery.

“It really changed the context of this scary event for this guy,” said Dr. Englesbe.

"Preoperative Optimization: Nuts and Bolts"

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UAB Clinic Makes PACT to Build on **Impressive Perioperative Care Momentum**

At one point in his talk on UAB's transition to a Perioperative Surgical Home (PSH) model, Dr. Vetter was inclined to apologize to the audience for the seemingly low rate at which a group of his medically complex patients had a correct electronic medical record (EMR) medication list postoperatively – 25 percent.

That number, though, according to Dr. Vetter, is fairly universally consistent, and not many institutions are doing much better.

Much more noteworthy than that 25 percent rate was the improvement Dr. Vetter and his colleagues saw when they instituted their Perioperative Patient Medication Reconciliation Program.

"We were able, over a very short period of time, in about six weeks, to get our values up in the 80 to 90 percent range," said Dr. Vetter. "In the final four to six weeks of the period, we were able to keep it at 100 percent. This is something you can easily tackle, I think, at your institution."

Dr. Vetter's lecture underscored the components of the PSH that emphasize patient-centeredness and shared decision-making, which he elucidated through his institution's semantic and clinical evolution:
PAT: Pre-Admission Testing (1990)
PAC: Pre-Anesthesia Assessment Clinic (1995)
PACT Clinic: Preoperative Assessment, Consultation and Treatment Clinic (2010)

The PACT Clinic moniker was intentionally chosen to most effectively communicate the clinic's comprehensive scope of practice and services, reinforcing the fact that it will continue to grow into its full potential.

Reducing Readmissions

The UAB Perioperative Patient Medication Reconciliation Program was created to help lower readmission rates caused by medication errors after patients have gone home. He noted that the Centers for Medicare & Medicaid Services will soon begin penalizing institutions for readmissions (3 percent penalty for 30-day readmissions for total hip and knee arthroplasty patients).

Dr. Vetter's group positioned a pharmacist in their PACT Clinic to reconcile the medicine lists of THA and TKA patients and to reinforce preoperative medication instructions in high-risk patients. The solution was simple but its effects profound.

Blood Management

Similar successes were reported in UAB's recently developed Perioperative Blood Management Program (PBMP), which proved timely as, according to Dr. Vetter, within the next 12 to 18 months, the Joint Commission will likely begin implementation of a set of electronic patient blood management performance measures.

Referencing a 2015 *Anesthesiology* study and 2014 guidelines from the Society for the Advancement of Blood Management, Dr. Vetter detailed his institution's PBMP program after sharing some sobering facts: Upon factoring in labor, overhead and adverse patient events, the original average price point of $240 for a unit of blood increases to around $2,250.

Given that they are involved in upward of 50 percent of the decisions to transfuse, anesthesiologists are the natural catalysts for change in blood management practices.

Dr. Vetter's PBMP initially involved 40,000 international units of Procrit, 200 milligrams of I.V. iron sucrose given at minus 14, minus 7 days and as needed on the day of surgery. Around 40 percent of THA patients in his clinic were found to be anemic preoperatively, and they were transfusing around 2.8 units per patient. They made four things happen that led to the eventual improvement of transfusion rates:

- All patients found to have preoperative anemia were instructed to contact their duly informed primary care physician for follow-up and possible further evaluation.
- They utilized the AABB restrictive blood transfusion trigger of Hgb <8 g/dl.
- They developed a consensus among their anesthesiology group for a new hemodynamic criteria applied intra-operatively and postoperatively: one unit of PRBC and then re-evaluation.
- Emails were sent to all members of the perioperative team regarding new and revised protocol.

The result was a reduction in transfusion rates from two to one unit. And previous transfusion rates of 36.7 percent of THA patients and 14.3 percent of TKA patients were reduced to an aggregate 2.5 percent.

Finally, it was important to identify manageable ways for patients who travelled long distances to get follow-up care.

Dr. Vetter established a collaborative relationship with 10 infusion centers throughout Alabama.

"I'm very grateful I've been able to get infusion centers throughout the state to play ball with us," he said.

"Enhanced Recovery After Surgery: The Role of Multimodal Pain Management."

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Non-Opioid Pain Management **Reduces Length of Stay, Costs**

For years, opioids have been the first choice when managing the pain of surgical patients, but a multimodal approach using a variety of non-opioids, such as NSAIDs, COX-2 inhibitors and acetaminophen, is effective and reduces length of stay and costs.

Dr. Gan issued a call to move away from using opioids to manage pain.

"We should change our model of pain management from using weak opioids for mild pain, more opioids for moderate pain and even more opioids for severe pain, to perhaps starting off with non-opioids and then using opioids as more of a rescue drug rather than initially starting with high doses of opioids," said Dr. Gan.

The Costs of Pain

Pain management is a key element of enhanced recovery, he said, adding, "If you want to have a successful perioperative home strategy or an enhanced recovery strategy, one of the key components is pain management."

Dr. Gan reviewed studies conducted in the last 20 years that asked patients, "Do you have any pain after surgery?" Answers were consistent, with 50 percent reporting moderate pain and 30 percent reporting severe or extreme pain at some point, with opioids as the primary treatment for managing pain.

"Although they are different surgical populations, you can still get a flavor that many of our patients are still in agony after surgery," he said. "Severe, extreme — this is not a trend that we want to hear from our patients."

In a recent pain study led by Dr. Gan, it was also found that bowel function is a primary determinant of length of stay, with patients returning home the day after they began to eat and drink, and their bowels had recovered.

"So if we can have our patients' bowel functions recover earlier — that is the key indicator of being able to discharge patients out of the hospital quicker," Dr. Gan said. "We also know that there are many opioid-related adverse events that drive up the cost of health care delivery.

Non-opioid options can be used to reverse this treatment approach, and the options are numerous and effective, he said. The pain impulse travels from the periphery to the central nervous system, and it is known that regional blocks, acetaminophen, NSAIDS and COX-2 inhibitors can effectively manage this pain. Effective drugs include ketamine, gabapentin, pregabalin, clonidine, dexmedetomidine, lidocaine and dexamethasone.

"There is enough data to suggest that the combination of acetaminophen and non-steroidals works better than the individual drugs," Dr. Gan said. "If you were to combine acetaminophen with ibuprofen or other non-steroidals, it would provide better analgesia, and that is something that we need to do because they act differently."

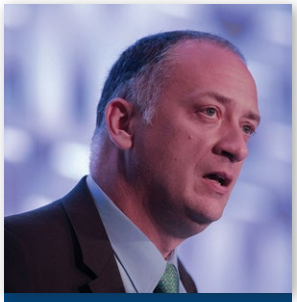
Learning From Colorectal Surgery Successes

Dr. Gan reviewed the effectiveness of a treatment protocol for colorectal surgery developed when he recently worked at Duke University Hospital. Its key elements were pain management, fluid management, patient education and faster recovery that aimed to get patients out of bed, and eating and drinking as early as possible.

"That was our protocol using the combination of I.V. acetaminophen and ketorolac," he said. "We also used thoracic epidurals, infused the epidural with local anesthetic throughout the case and, in addition, kept the epidural until the patient started to eat and drink — which is usually the day after — and then removed the epidurals.

With this pain management protocol, along with other elements of enhanced recovery, Dr. Gan and his group showed a significant reduction of about two days (for discharge) for patients undergoing colorectal procedures. In addition, there was a four-fold reduction in opioid consumption in patients who were treated using a multimodal analgesia approach.

"This is the same message from the ASA task forces for pain management. Whenever possible, we should use the multimodal approach incorporating acetaminophen, non-steroidals and other non-opioids," he said.



"Intraoperative Fluid Management to Improve Surgical Outcomes"

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Management of Fluids **Reduces Complications for Surgery Patients**

The management of fluids in high-risk abdominal surgery patients through goal-directed therapy has led to a reduction in complications and significant cost savings at the University of California, Irvine.

"We found that the anesthesia provider is the major determinant of how much fluid the patient receives during surgery. We are responsible for this huge variability when it comes to fluid management," said Dr. Cannesson.

The early development of the concept of goal-directed therapy was led by Emanuel Rivers, M.D., M.P.H., the lead author of a groundbreaking paper on the management of sepsis published in 2000.

"(The paper reported that) if you set very early goals for the resuscitation of these patients by optimizing the central venous pressure and the mean arterial pressure … when you apply this concept versus a management where there is no protocol of care, there is an improvement in outcome," said Dr. Cannesson, who is former Professor and Vice Chair of Research in the Department of Anesthesiology and Perioperative Care, UC, Irvine.

Because goal-directed therapy made an impact on the standard of care in sepsis and greatly reduced mortality in patients by standardizing care, a similar approach is now being applied to the perioperative management of fluids following a 2011 study.

Seeking Protocol

"We asked institutions if they have protocol for fluid management and hemodynamic optimization during high-risk surgery," Dr. Cannesson said. "Most institutions in the U.S. and Europe have no protocol for the fluid management of the high-risk patient or for hemodynamic optimization."

This is important because research shows that when a patient is hypervolemic or hypovolemic during surgery, there is an increased incidence of complications. "So, theoretically speaking, we should tie in volume studies," he said.

More than 20 studies have showed that using an optimized strategy for fluid management or goal-directed therapy led to decreases in morbidity and mortality, Dr. Cannesson said.

"This concept of goal-directed therapy as part of the surgical home is probably a way to optimize the way we provide care to the patient and improve the patient's outcome," he said, adding that research shows a relationship between preload and stroke volume.

"So, when we look at the way we practice, the massive volume of fluid we give to patients during surgery and the huge variability, this very simple approach for fluid management has potential to improve outcomes," Dr. Cannesson said.

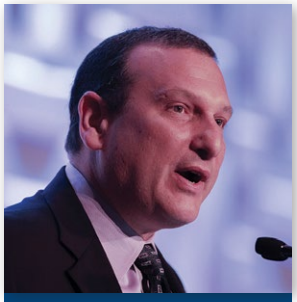
"When you look at the PSH concept and documents, you can see that the concept of precise fluid management is one of the central parts of the perioperative surgical home."

New Curriculum for UC Irvine

Based on this evidence, UC Irvine launched a quality improvement program for fluid management and hemodynamic optimization for surgery about four years ago. It developed a curriculum to train all residents, faculties and nurse anesthetists.

"Some of us would teach our colleagues, residents and the nurse anesthetists to apply goal-directed therapy during surgery at the bedside," Dr. Cannesson said of the program. "We would have a group of four or five team leaders helping the whole department to learn the strategy."

Over a two-year period, the goal-directed therapy led to fewer complications, the median length of stay for high-risk abdominal surgery patients was reduced two days and the annual savings totaled $816,000.



"Standardization and Clinical Pathways: Essentials for Successful Implementation of the Perioperative Surgical Home."

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A Surgeon's View: **How the PSH Helps With Common Procedures**

Adoption of a PSH is seen as a method for improving efficiencies in treating all surgical patients, but the effectiveness of the PSH approach is often best demonstrated in patients undergoing more common procedures.

"The overall flow in my experience has really been enhanced. The patient's flow from arrival to discharge has been very efficient and quick, and the turnover times have been greatly improved since the implementation of the surgical home at UC Irvine," said Dr. Rafijah, who focused on total joint arthroplasty in his institution.

"Total joint arthroplasty is a pretty consistent operation from hospital to hospital and provider to provider — at least the primary arthoplasties are — yet there remains a significant variability in cost throughout the United States. Because of this variability, there has been a decline in the profitability of this operation," Dr. Rafijah said. "We would like to transition to a perioperative home, which is seamlessly integrated protocolized care, with each phase of care resulting in shared decision-making and patient-centered care."

A Team Sport

At UC Irvine, a starting point in implementing the PSH program was to improve communication among all those involved, from surgeons to administrators.

"The surgical home is really a team sport," Dr. Rafijah said. "(It started) by developing a means of communication among all the providers who would be involved in surgical care of the patient. Another key in rolling out the surgical home in your hospital is to do it in bits and pieces. Find things that you can win at and start by implementing one thing at a time."

Despite all the benefits for the health care team, it is important to remember that providing a positive patient experience is the ultimate goal. Enhancing the patient's experience is crucial.

"I sit down with my patient and we decide that we are going to do an operation. I talk about the risks, the benefits, the alternatives, how the surgery will go, and the overall rehabilitation plan. Then I decide to enroll the patient into a surgical home. All I have to do is open one page on the computer screen and fill out just this one form. It takes me literally 20 seconds and the patient is enrolled, and they are on the path in the surgical home care."

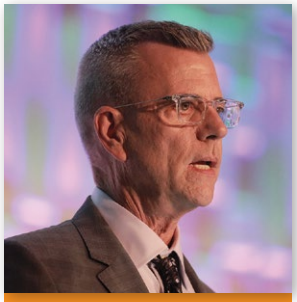
In the preoperative period of the PSH, the patient is screened using standardized lab tests. Also during this period, the surgeon's preferences for antibiotics and controlling DVT prophylaxis and the patient's multimodal pain regimen are recorded.

"For our joint replacement patients, if possible we send them to preoperative physical therapy and occupational therapy training so that they can learn what challenges they will face postoperatively long before they experience the pain of surgery," Dr. Rafijah said.

On the day of surgery, standardized pain medications and fluid protocols have already been identified, along with the surgeon's preferences.

"With joint arthroplasty, this is the straightforward thing to do as there is little variability from operation to operation with primary total hip and total knee arthroplasty," Dr. Rafijah said. Workflow is standardized so everyone in the O.R. knows what to expect and what the anticipated plans and preferences are.

"It is wonderful now that our anesthesia colleagues are helping to manage our patients postoperatively from transfer, to PACU, to discharge from the hospital. This includes acute care and medical management. And there is a great deal of communication between physical therapy and discharge planning. This reduced variability has resulted in reduced hospital stays, decreased pain, and improved patient satisfaction."



"Beyond the PACU: The Inpatient PSH Service"

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PSH Success Leads to **Expansion at UC Irvine**

Practicing within the paradigm of the Perioperative Surgical Home can be a challenge for some anesthesiologists because it is different from the way they were trained. However, it is proving to be successful where it has been implemented and is expanding into additional service lines.

Dr. Engwall detailed how the PSH is used at the University of California, Irvine, Health, how it is expanding and how it has reduced costs.

"I think there is a lot of anxiety with anesthesiologists now that we are going to follow these patients with the surgical home after they leave the recovery room. It is a new model that feels a little like the Wild, Wild West, and it ain't the O.R. any more," Dr. Engwall said.

Beyond Total Joints

When the PSH was first established at UC Irvine, it was used to manage total joint replacement patients, but it has been expanded to include nephrectomies, cystectomies, spine surgery and outpatient orthopedic procedures.

"Prior to the introduction of the PSH, these patients stayed in the hospital longer and they had many more issues," Dr. Engwall said. "We had to redevelop and redefine ourselves. We ended up combining the inpatient pain service patients with the PSH patients into one combined service. We liberated the acute pain attendings who also were doing regional blocks for patients going to surgery and had them just focusing on the inpatient service, and assigned attendings to do the blocks in the operating room. We created an inpatient service completely independent of the operating room."

The new combined inpatient service team is staffed around the clock by a "core team" of an attending physician and a perioperative medicine fellow or acute pain/regional fellow. Daytime support is provided by the core team and a nurse practitioner, a resident and possibly an additional perioperative medicine fellow or acute pain/regional fellow.

"Before we went live with a formal inpatient team, we provided them with a two-day seminar on management in the postoperative period. The outgrowth of this were some algorithms and the standardization of how to manage issues postoperatively," Dr. Engwall said, adding that future fellows and attendings also will receive training.

The service also developed a "goal board" that displays pertinent information on each of the patients. Clicking on a patient displays the patient's treatment milestones and goals, and tracks their progress.

When a patient enters the service, a PSH acceptance note is created to formalize the hand-off of the patient, with a review of the patient history and treatment goals, which are passed on to the inpatient team. A structured note is then used to document the progress of each patient daily. A complication list for each patient is in development.

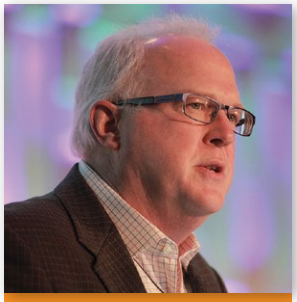
When a patient is ready for discharge, a formal PSH discharge note is sent to the patient's primary care physician or skilled nursing facility to provide them with the patient's history from the O.R. to discharge, medications, tapering schedules and follow-up appointments.

"We also give out information on whom to contact so they can call us if there are any issues," Dr. Engwall said.

Cost Savings, and Next Steps

In 2014, the service lines saved $1.6 million in costs and freed up 190 days of available inpatient hospital beds for other patients. The next step is to break up the model into a PSH inpatient service and an acute pain inpatient service because of an increased volume in both services, he said. Both teams will be supervised by a perioperative medicine director.

"The Perioperative Surgical Home is the future of anesthesiology," Dr. Engwall said. "I think everybody needs to build it differently in their organizations depending on how they are resourced."



"The Burden of Readmission"

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Reducing Readmissions Starts with **Evaluating Data, Patients**

Hospital readmissions within 30 days of treatment are a drain on the economy, costing $41.3 billion in 2014, so there is a push to reverse the trend. Reducing readmissions, though, should not begin with treatment, but much sooner, starting with a study of your institution's patient data and establishing a process to evaluate patients before treatment.

"Evaluate the data at your hospital as to which procedures are associated with the readmissions that you are trying to prevent," said Dr. Merrill.

"I can't recommend more highly the creation of a shared decision-making office that would see all elective surgical patients ahead of time to evaluate their risk, not only for death, but for the kinds of care they are going to require postoperatively," he said. "Having frank discussions with patients who will clearly require postoperative care outside the home, sometimes for a prolonged period, is very important.

"Although patients typically can consider death as a risk and balance that against the value of surgery, they rarely understand that there is a chance they will never go home and live an independent life again. Yet that is more significant for some of them than the risk of death."

Reevaluating Readmissions

Dr. Merrill discussed not only processes to reduce readmissions but health factors that can provide clues that a patient is a prime candidate to return to the hospital following discharge.

CMS reports that 20 percent of patients are re-admitted within 30 days for all causes. The Medicare Payment Advisory Committee (MedPAC) estimates that 75 percent of those admissions are preventable.

Armed with these data, CMS began penalizing hospitals for excessive readmissions in 2011, and penalties have increased each year, reaching 3 percent of an institution's base inpatient hospital payments in 2015.

"In 2015, the average hospital penalty payment, which was $125,000 in 2011, will have risen to $400,000," Dr. Merrill said. "This is a significant cost. When we talk about who is getting re-admitted and why it is important for the PSH, you are going to take a look at this list and say, 'It's not any of our surgical patients.' Well, they are our surgical patients, but it is not for surgical reasons."

For Medicare patients, the top causes of readmission are congestive heart failure, sepsis and pneumonia. For Medicaid patients, the leading factors are mental health, pregnancy complications, and diabetes and alcohol problems. In private practice, the leading causes are chemotherapy maintenance, radiation therapy, mental health disorders and, finally, surgical complications.

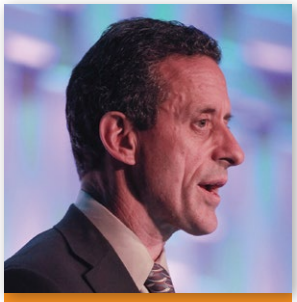
Looking Beyond Lab Studies

Effective PSH leaders should be aware of these conditions, as well as patients with COPD and elderly patients who have comorbidities or are frail. Frailty is present in one of five patients over age 65. Nutritional supplementation and preoperative rehabilitation programs are effective, but require at least six weeks to drive change.

"If your patients aren't prepared with regard to their physical capacity, but the patient and the surgeon still want to proceed and the patients are failing on their frailty scores, my recommendation is that you put a referee committee in place," he said. "It should be multi-disciplinary and probably headed by your CMO, and it should actually sign off as to whether an elective procedure should go forward. This has had good success where it has been used, including allowing surgeons to step back and let the patient hear concerns without attributing them to the surgeon."

The evaluation of patients also should include implementing a geriatric surgical patient care docent program and establishing a perioperative preparation and care algorithm that includes all factors that can affect recovery.

"Those are the issues that you need to look at, not just the lab studies, not just paying attention to make sure that the intraoperative anesthesia will go well," Dr. Merrill said. "The most effective time to prevent readmission is weeks to months before the admission."



"Postoperative Complications and the NSQIP Database"

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NSQIP a Good Tool to **Collect Useful Surgical Data**

Collecting data on procedures is a critical component of a surgical program, and a key source of information for a number of institutions is the American College of Surgeons National Surgical Quality Improvement Program (NSQIP), which was established in 1991.

"The ACS NSQIP is a data-driven, risk-adjusted, outcomes-based program to measure and improve the quality of surgical care," said Dr. Stamos. "It is physician-driven, and it has evolved continuously."

NSQIP tracks data in five programs: Essentials, Small and Rural, Procedure-Targeted, Pediatric and Measures. Among its benefits are that it identifies quality/performance improvement targets, can help improve patient care and outcomes, can be used to decrease costs and can be used for research.

Currently, 470 institutions of all sizes participate, and that number is expected to grow to 700, including hospitals outside the United States. NSQIP collects preoperative data, intraoperative data and postoperative data, and custom fields can be created to allow collection sites to add their own variables for internal tracking and evaluation.

Measuring Up

Dr. Stamos showed a slide that tracked how UC Irvine's quality and safety compared with national data since the institute began participating in NSQIP in 2007.

"This allows us to track these data and look for areas of improvement, which we have done quite effectively with our partners in anesthesia, the C-suite, our nursing team and others," he said. "This program allowed us to straighten out our problems. You can get as granular as you want to get with this. It allows you to focus on areas where you need to pay attention and, hopefully, make improvements."

Institutions participating in NSQIP can join consortiums to share information comparing data from consortium members. He emphasized that the point is not to be competitive, but to work together to help everyone improve outcomes. Data collected through NSQIP also can be used to develop custom fields for targeting ERAS (Enhanced Recovery After Surgery) bundles, satisfying credentialing requirements for Ongoing Professional Practice Evaluation (OPPE) and assessing the impact of policy change.

NSQIP also offers a surgical risk calculator so preoperative information about a patient can be entered to estimate a patient's risk of postoperative complication.

"Measuring the Success of the Perioperative Surgical Home"

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Robust Data Collection System a Key in Proving **PSH Success**

The patient information collected by the PSH "Data Mart" at the University of California, Irvine, Health, demonstrated positive outcomes and proved that any promising PSH must be supported by a robust information technology system – even if that system requires a great deal of effort to implement.

"Building a Data Mart is a great idea because it puts you in charge of the data. It is a huge amount of work to do up front, but once it's built, the data for all of your patients just flows in and you have control. You can run reports as often as you want," said Schwid.

"We are using the data for tracking the daily progress of patients, monthly process improvement reports and participation in the ASA PSH collaborative," said Dr. Schwid, who is in charge of information technology projects for UC Irvine's PSH. "The measured success we have had includes decreased length of stay, decreased cost per case, decreased number of readmissions, shortened PACU times, decreased incidence of post-op nausea and vomiting, improved pain scores in the PACU and improved patient satisfaction."

Patient data flows into the Data Mart at one location from a variety of other sources. The data is used for three purposes:

- To control the patient progress board, which is updated every 15 minutes so the PSH team can track the status of patients using the board or portable tablets.
- To create team leader reports, which are monthly meetings where PSH service leaders examine data from previous months to review processes and look for ways to make improvements.
- To be added to the ASA PSH metrics collaborative so the information can be merged and compared with data from other institutions' PSH services.

"All of them lead back to analysis and process improvements, so we are constantly adjusting our pathway to make things go as smoothly as possible for the patients," Dr. Schwid said.

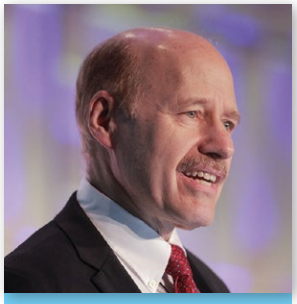
Structured Notes

A key to the success of the Data Mart is its structured notes, which consist of check boxes rather than free text that must be gathered by data extractors, increasing operating costs. The data from the structured notes is used to update the patient progress board, which then updates team members on whether a patient is following the treatment pathway. Included in the data are indicators that highlight a patient's risks, notices of any acute problems, such as wound infections, and details of pain management.

"The board is designed to help us see exactly where the patient is starting to fall off the pathway," Dr. Schwid said. "When there is one day left in the pathway, our team is notified immediately that it is time to make sure all the details are taken care of for this patient's timely discharge."

These data drive team leader reports, which track progress on the pathway. The overall reports show faster progress on the pathway for total joint replacements compared with Medicare projections. This faster progress enables UC Irvine to save about $5,000 per case, he said. The reports also indicate reduced time spent in the PACU, lower pain scores and increased patient satisfaction measures.

"Building a Data Mart is a great idea because it puts you in charge of the data. It is a huge amount of work to do up front, but once it's built, the data for all of your patients just flows in and you have control. You can run reports as often as you want."



"Teaching the Next Generation of Perioperative Physicians"

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Leadership in Perioperative Management Requires Changes in Training

The future of anesthesiology is headed in the direction of perioperative medicine, but for physician anesthesiologists to lead that change, there must be changes in training.

"There was a survey of practicing anesthesiologists, trainees and fellows. There was universal agreement that in the future, anesthesiologists will have more responsibility for perioperative care," Dr. Pearl said. "But very few people felt that their syllabus adequately covered perioperative medicine. Half of the practicing anesthesiologists and over three-fourths of the trainees felt they did not have sufficient training to become a perioperative physician."

Important Elements in Perioperative Training

Among the components considered important in training a perioperative physician are: perioperative evaluation and optimization to assess and decrease risk; intraoperative anesthesia using procedure-specific or risk-reduction protocols; postoperative management, including critical care; and the coordinating function — guiding patients through critical pathways, treating pain and nonsurgical morbidities, and ensuring continuity of care.

After reviewing current Residency Review Committee requirements for anesthesiology, Dr. Pearl said, "Only about 15 percent of this is directly relevant to perioperative medicine. There is essentially nothing on postoperative management beyond the ICU and PACU, and there is nothing about other skills, such as team training, quality management and coordination of care."

The Society of Academic Anesthesiology Associations (SAAA) consists of program chairs, program directors and subspecialty fellowship directors of institutions across the United States. At its last meeting, members endorsed a motion that the specialty be renamed "anesthesiology and perioperative medicine." Afterward, five members, including Dr. Pearl, wrote an article published in *Anesthesiology*, "The Future of Anesthesiology is Perioperative Medicine: A Call for Action."

"In that article, we talked a lot about training," Dr. Pearl said. "Basically, if we are going to take on more perioperative responsibilities, there has to be accompanied enhancement in the training curriculum. The current curriculum does not sufficiently emphasize the postoperative treatment of surgical patients outside of pain and critical care."

PSH Could Drive ACGME Changes

An ASA task force recently examined how ACGME core competencies might have to be changed with respect to the PSH. The task force concluded that 57 elements and seven domains were not adequately addressed or addressed at all. Among the domains that need to be upgraded in training are patient care, medical knowledge, system-based practice and professionalism.

"One issue is how we will be able to incorporate all of this training into a residency curriculum that already is very, very full," Dr. Pearl said.

Among the suggested changes are to replace O.R. rotations and consider a minimum of an additional year beyond current residency training, recognizing that more than half of residents are already taking an extra year of training through fellowships.

"Basically we would have everyone do an additional year — some in a traditional fellowship, some might be in a non-ACGME clinical fellowship and some might be in an area related to perioperative medicine," Dr. Pearl said. "I have the honor of helping co-chair a new workgroup jointly formed by the ABA and ASA that is going to work on some of these issues, and we welcome your input."

Over the past 25 years, Stanford has worked to expand its perioperative training, and Dr. Pearl reviewed the curriculum, adding that he believes some of the leaders in perioperative medicine will be those who have additional training.

"I'd like to emphasize this is a very critical time. All the specialties believe the future is perioperative medicine, and if we don't lead, someone else will," he said.

"Lessons From the ASA's PSH Learning Collaborative"

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Lessons Learned from Starting a **PSH Are Shared Through Learning Collaborative**

The PSH is a relatively new concept that will continue to evolve. One of the key aspects of that evolution is shared knowledge among PSH institutions

"There is no expectation that every Perioperative Surgical Home will look alike. It all depends on your health care organization in terms of what its resources are and what your community looks like in terms of the patient population and the strategic goals for your PSH," said Mike Schweitzer, M.D., M.B.A. "Of the organizations that have started perioperative surgical homes, 72 percent have some form of the PSH up and running, and all of them look totally different. The most common pilots are involving orthopedic, colorectal, urology, spine and general surgery service lines. It's a great learning collaborative because there are so many different models out there that we can learn from and gather information."

Peter Dunbar, M.B., Ch.B., M.B.A., said the original goal was to enlist 10 or 12 health care organizations in the collaborative.

"You could hardly imagine our delight when 44 organizations decided that they wanted to participate. This gave us the critical mass that we needed to collect information and have organizations actually working together."

Through the collaborative, a website for sharing information was developed, including 30 one-hour webinars about the PSH.

"If you're in a collaborative, you cannot only share what you've learned, but other people can share with you," Dr. Dunbar said.

The collaborative's "guiding principles," Dr. Schweitzer said, were:

- Creating a portal of entry for the patient and ensuring continuity of care and communication. "Manage, coordinate, communicate. Manage, coordinate, communicate," he said. "You can't say it enough and you can't do it enough across all the different specialty lines and silos of care."
- There is no expectation that every PSH will look alike because each is developed in a different environment.
- The infrastructure of the PSH should comprise a governing structure that includes formal and informal committees, and physician champions.
- If you are going to share savings from the PSH, legal support and establishing a fair market value for any co-management agreement will likely be required.

As Medical Director of the PSH Learning Collaborative, Dr. Schweitzer surveyed learning collaborative participants in October 2015, prior to its conclusion in November. The preliminary survey results indicated that the top three barriers for success included EMR/Data challenges, lack of staff resources to manage the project, and lack of funding to administer the PSH. This survey information highlights the need to engage your health care organization's top leadership early to prioritize the resources and staff required for success.

"The key to a perioperative surgical home is the re-engineering of the delivery of care. This is absolutely a must," Dr. Schweitzer said. "You also have to have cost reduction. You have to know the numbers. You have to be transparent about what the costs are."

Another key to a successful PSH is leadership – and a physician anesthesiologist does not have to lead, he said.

"We have a variety of specialists leading the PSH. Are anesthesiologists at the table for the leadership team? Yes. But everything is local. Just like politics is local, the physician champions are local," Dr. Schweitzer said. "Leadership is important and you need to be engaged and involved in that, but it doesn't have to be an anesthesiologist leading it."

"Economics of Surgical and Interventional Care Today: Anesthesiology's Choices for the Future"

Stanley W. Stead, M.D., M.B.A.
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ASA Vice President for Professional Affairs,
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AMA Relative Value Update Committee,
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Contribution to Savings Is Key to **Economic Success of a PSH**

The current fragmented, fee-for-service health care environment is allowing vulnerable patients to fall through the cracks postoperatively – and it's costing us.

According to data presented by Dr. Stead, the average overall 30-day follow-up rate for all surgical patients is only 92 percent. The rate for congestive heart failure patients is just 80 percent. We expect all of our patients to be followed-up postoperatively.

"I was shocked. Patients who are being discharged from the hospital are being lost to the system," said Dr. Stead. "Nobody is following up with them. Patients don't know what they're supposed to do. I know we gave them all instructions… but nobody followed up. A lot our problems… are because nobody is watching, because we're all assuming someone else is doing it."

When issues arise, many patients then head to the emergency room where, Dr. Stead said, "all bets are off." Large sums of money are subsequently spent on patients who should have received follow-up care at a much earlier stage in their perioperative journey. And a golden opportunity to decrease costs and improve patient satisfaction is lost because of poor coordination of care.

'Contribution to Savings'

Some sobering statistics: 70 cents of every dollar in the entire U.S. budget is spent on health care or health care-related issues, and only 16 percent of that money goes to physicians. The majority goes to facilities, which are increasingly under pressure from the government to decrease spending while improving quality.

In a value-driven system, physicians' financial opportunities will be tied to measurable contribution to savings. The good news is that physician anesthesiologists are well-poised to be leaders in this new system. Value can easily be found in a PSH model through the activities that anesthesiologists are involved in every day.

The major challenge for many anesthesiologists is to think outside of the "acute care box."

"We are going to have to be able to manage the patient throughout the entire period of care. We are going to need reminder systems, tracking systems. You are going to have to know what is going on with your patients every day in an objective way. Also, if you want to be compensated for making systems better, you need to be able to document it."

In a PSH, payments will come from contributions to savings in hospitals and will be tied to decreased use of hospital resources, standardization, decreased use of imaging and labs, decreased use of blood products, controlling pain and reduction of length of stay.

Dr. Stead illustrated potential cost savings with data regarding the proper administration of antibiotics. The additional cost of infection for total joint replacement surgery is more than $18,000 per occurrence.

"We know that if you give the antibiotics appropriately, you cut infection between one-half and two-thirds…. There are huge savings when you give the right antibiotics and you take responsibility for it. These are contributions to savings that we can tally up," said Dr. Stead.

Great Data

There are tremendous opportunities for contributions to savings relative to every institution, but all of them rely on good data. The good news is that great data is available to hospitals through Medicare Spending Per Beneficiary information reports, which can be found on CMS' website, and which details every one of CMS' DRGs.

And many hospitals now participate in the BPCI (Medicare Bundled Payments for Care Improvement), which offers highly detailed information, including every charge performed by every clinician in participating hospitals.

"The economics are really clear – it's about *contribution to savings*. Be prepared to measure. Be prepared to be measured. Be prepared to benefit," Dr. Stead concluded.

"Co-Management Arrangements: A Guide for Success"

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Co-Management: 'Anesthesia Needs to Be at the Table'

As a chief medical officer, Dr. Schweitzer has seen co-management arrangements reap benefits for surgeons, cardiologists and other specialists based on metrics related to anesthesia – but anesthesiologists did not share in those benefits.

"We invited anesthesia to the table," he said, in reference to a pilot project for a bundled payment care improvement program several years ago in San Antonio. "But they didn't come."

In the past four years, Dr. Schweitzer remarked that he has seen very few anesthesiologists participating in co-management arrangements, despite their qualifications and clear justification for doing so.

He called anesthesiologists one of the "ideal leaders" of the PSH, but indicated that new skill sets will be required of them if a co-management arrangement is to be beneficial within a PSH model.

Co-Management Is Not Clinical Co-Management

Dr. Schweitzer described co-management as a way for physicians to "start tomorrow" with a process for getting paid for their time spent attending meetings, re-engineering care and improving quality and efficiency metrics – before the shared savings of bundled-care contracts are realized.

There are four basic fundamentals of co-management:
Governance: A legal entity is created that manages a hospital's service line and the entity's performance metric goals. Legal guidance from an attorney experienced specifically in medical co-management arrangements is essential.
Fixed Duties: Physicians participate in non-clinical educational duties that further the goals of the service line and are paid for their duties as administrators.
Performance Metrics: Physicians must improve performance in areas such as clinical outcomes, quality, efficiency and patient satisfaction and are paid according to their level of success in achieving pre-determined targets.
Valuation: Physicians receive compensation for providing management services at fair market value (what a full-time, third-party service line physician manager might receive).

One Performance Metric Not to Be Used

Co-management agreements cannot be tied to an increase in volume, as this metric violates Anti-kickback or Stark Laws and may warrant investigation by the Department of Justice. Sample metrics include readmission rates, quality (as measured by national benchmarks), and patient safety and overall patient satisfaction.

Finally, good documentation is essential to help support co-management payments in terms of coding, which is especially important in light of the recent transition from ICD-9 to ICD-10.

Keeping Up With Core Measures

Medicare's core measure domains in value-based purchasing programs are going through big changes and will influence the direction of co-management arrangements. Historical breakdowns consisted of 70 percent core or process measures and 30 percent satisfaction. In 2015 those numbers were adjusted to 20 percent efficiency measures, 30 percent outcomes, 30 percent patient experience and only 20 percent process measures. In FY 2017, process measures will only account for 5 percent, with efficiency and outcomes making up the bulk of Medicare's Hospital Value-Based Purchasing measures.

Efficiency will be measured by Medicare's Spending Per Beneficiary methodology.

"What is efficiency? It's Spending Per Beneficiary. What are outcomes? Those are things like readmissions," said Dr. Schweitzer. "For example, if you have a readmission for a total joint patient, you could get dinged twice – once for the efficiency measure and the second for the outcomes measure in the Hospital Readmissions Reduction Program, because you readmitted the patient."

You Get to Be the Boss

A well executed co-management agreement benefits all stakeholders, from physicians to the hospital to patients. For the physician, there is finally an opportunity for significant involvement in management. Physicians are paid for quality performance in an arrangement that aligns the group for participation in alternate payment models and eventual qualification for MACRA (Medicare Access and CHIP Reauthorization Act).

And hospitals finally have organized physician input that can help them prepare for shared risk, provide continuity of care across the perioperative continuum and open a pathway for value-based purchasing.

“Patients benefit from an interdisciplinary team focused on improving quality, patient safety and outcomes. Co-management can truly be a win-win-win,” said Dr. Schweitzer.

"The Perioperative Surgical Home From the States' Perspective"

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Bringing States to the Table: **You Must Show Them the Win-Win**

Not long ago, if a PSH model would have been suggested to state programs, they might have answered, "What's that?" Increasingly, though, states are seeing the early success of federal bundled payment systems and accountable care organizations and they are interested in what Medicare is doing to save money.

"As we become more successful and Medicare shows success, the state Medicaid programs will likely jump on the bandwagon, if they are not already doing so," said Dr. Leib.

State-run Medicaid programs have two main objectives that should resonate with anyone familiar with the tenets of the PSH: provide quality care and try to save money over current costs.

States are experiencing the same budget problems as the federal government – but probably even more so as states cannot print money or float debt as easily as the federal government, said Dr. Leib.

Where the states have a notable advantage over federal programs, however, is with a history of experience with the kinds of bundled care the federal government is increasingly working to implement nationwide.

State Medicaid programs have contracted for transplant services on the basis of bundled payments for years. They negotiate a rate with a transplant center that includes all the services surrounding a particular transplant procedure.

The physician anesthesiologist payment most likely was negotiated as part of a bundle rather than as a separate payment for each service.

"And this can easily be compared to the services a perioperative surgical home can provide," said Dr. Leib. "If you can frame your PSH services in terms of saving money similar to the federal government, you are likely to have more success."

What Does OB Have to Do With the PSH?

According to Dr. Leib, there's nothing magical about the PSH that says it is only appropriate for O.R. procedures.

"If you can reduce the cost of OB, you will have every Medicaid program at your doorstep waiting to sign contracts," said Dr. Leib.

That's because in almost every state in the country, Medicaid covers 50 percent or more of all births. Total-joint procedures, congestive heart failure and pneumonia, on the other hand, represent miniscule Medicaid expenditures.

By pulling data similar to the Medicare cost data per-patient for OB patients, including prenatal care, deliveries, post-delivery care, etc., anesthesiologists can easily construct a package on a per-patient basis that would be very attractive to a state Medicaid program.

Dr. Leib added that anything that could be done to reduce C-sections would be of major interest to Medicaid programs, as they are under mandates to do so.

"We are starting in the 30 percent-plus rate for C-sections and the goal is to drive it down to below 15 percent – specifically driving out the elective C-sections that occur prior to 37 weeks," he said.

One Size Does Not Fit All

There are drawbacks to OB packages, Dr. Leib said. Highly expensive treatments should not be included, as they are too dangerous financially for the institutions and physicians participating in the contract.

"If you do enter into those contracts for the entire perioperative peri-natal period, then you want to make sure there are exclusions and risk adjustments so that if certain things occur, all bets are off, and you are no longer bound by that package," said Dr. Leib. "There are things that can be so detrimental cost-wise that they would be outside the realm of typical risk. For example, it may be attractive to include a short stay (24-48 hours) in the NICU in the bundled payment, but longer stays need to be excluded because of their unpredictability."

Especially when it comes to Medicaid, the PSH is not a one-size-fits-all proposition. The principles of the PSH are the same, but when dealing with the states, one must begin with a completely different set of data, analyze that data differently, then present that information to the health plans that cover Medicaid in a given area.

"A win-win solution in your state or even your locality within the state may be very different than another state's win-win situation or even another hospital system in your own state," said Dr. Leib. "But if you do it correctly, you could generate tremendous savings for your institution through Medicaid just like you do with Medicare. But you have to approach it from a different standpoint."

"Perioperative Surgical Home in Kaiser Permanente"

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Kaiser Permanente Goes Big, Sees **Big Success, With PSH**

As he detailed the progression of his group's perioperative surgical home at Kaiser Permanente, Dr. Qiu acknowledged often-mentioned advice from others who are developing their own PSH: start small – concentrate on one aspect of the PSH and work from there.

But he did not offer the same advice.

"I believe the complete perioperative medicine practice is important. If you want a big impact on your patients and in your institution, you need to practice the complete perioperative service in its entirety – it's not just one particular area that contributes to the overall success," he said.

Hitting a Wall

In 2014, Kaiser Permanente employed more than 17,000 physicians and had 9.5 million members. That year, the organization recorded 36.5 million doctor office visits and performed 221,660 inpatient surgical procedures.

"We're not doing bad financially, either," said Dr. Qiu. "$53 billion in operating revenue in 2014. To put this number in perspective, we're ahead of Amazon, UPS and we're ahead of Disney."

But in 2011-12 they realized they had "hit a wall." Despite a successful three years of fast-tracking total-knee arthroscopy (TKA) patients, in which they routinely beat national benchmarking scores, they found that length-of-stay scores were not improving and patient satisfaction remained static for about a year and a half.

When Dr. Qiu mentioned the PSH as a solution to Kaiser administrators, they asked, "What's that?" Then they asked, "How much will it cost?"

"We told them what the PSH was in our understanding, and we told them we couldn't guarantee any result, but the good news is we're not going to ask you for any money," he said. "I'd never seen in my Kaiser life that the three branches of our organization [health plan/insurance, the hospitals and physician groups jumped on board that fast."

Taking Ownership

After identifying three physician champions (two anesthesiologists and one surgeon), they questioned 20 patients from their previous fast-track program and received feedback about what Kaiser had done right and what they could do better.

A week before formal implementation, they invited all stakeholders to the hospital for a simulation test run, which proved important for identifying last-minute issues and building teamwork.

In June 2013, the first month upon implementation, Dr. Qiu's group was astonished by the drop in length of stay they observed.

"We are not just looking for a functional knee after surgery, we are looking for a functional individual *because* they have a functional knee."

"Immediately, suddenly. It was remarkable … we didn't believe it, we didn't know if it could be sustained," he said.

In the previous fast-track program, 80 percent of TKA patients bypassed skilled nursing facility (SNF) admission. Within the first few months, that number increased to 90. Today, Dr. Qiu said Kaiser maintains a 96 percent SNF bypass rate.

In its first year, the Kaiser PSH achieved impressive results from an initial sample of 518 patients:

- 673 fewer days in the hospital when compared to fast-track patients (1,088 fewer days than the national average).
- 2 fewer SNF admissions than fast-track (279 fewer than the national average).
- A potential cost savings of $1,442,784.

What was the difference between the care provided in the Kaiser PSH and previous methods that allowed them to achieve such dramatic results in such a short period of time?

"Actually, it was the same. We didn't invent a single practice. We practiced the same anesthesia. We didn't ask the surgeon to operate differently. We used the same admission criteria, the same discharge criteria and the same protocols for rehab," said Dr. Qiu.

The difference, Dr. Qiu said, was *ownership* and *leadership*. He called ownership the single most important factor of his PSH's success. "We took ownership of this process, and we believed in it." Leadership is key for what Dr. Qiu called "purpose-driven optimization." Physician anesthesiologists in particular, he said, need to learn new skill sets that are not typically taught or needed in a consultant service like anesthesia.

Functional Individuals, not Just Functional Knees

Dr. Qiu stressed the need to upgrade anesthesia practice to a "version 2.0" that follows the patient a year after surgery, and moves away from the current O.R.-centered patient care.

"We are not just looking for a functional knee after surgery, we are looking for a functional individual *because* they have a functional knee," he said.

In follow-up with patients who received care through the Kaiser PSH, most were satisfied or highly satisfied with that care. Some patients even reported that they thought their hospital stay was too short – despite the success of their procedures.

Dr. Qiu reported that 9 percent of his patients indicated their surgery did nothing to improve their life, and 7 percent reported that their procedures did some form of harm to them. All the more reason, he said, to think in terms of overall health and not just disease.

"We really have to rethink how we approach these patients. We need to dig deeper and figure out a way that we can do things differently."

"The Perioperative Surgical Home at St. Francis Hospital-The Heart Center: A Community Hospital Experience"

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Getting the Attention of the C-Suite: **New York Community Hospital Is Model for Teamwork, Persistence**

The PSH experience of Dr. Schulman and his team underscores the importance of buy-in and the roles that culture and attitude play in the success of a PSH model. Dr. Schulman quickly learned that changing entrenched attitudes and patterns was going to require motivational tactics.

One of those tactics started with simple online searches.

He first showed the audience 30-day readmission data from the Hospital Compare website that compared St. Francis Hospital to local competitors.

"I did a search on a Blue Cross website that compares relative costs of a total hip replacement between local hospitals on Long Island and New York City. Patients and third-party payers already have access to and can use this data when choosing a hospital and surgeon. This information is so easily accessible just by going to Google."

It was this type of information transparency that convinced the surgeons and other members of his PSH team to get involved. Many people who work in community hospitals simply are not yet aware of the changes taking place in medicine and do not realize that patients are more and more frequently accessing information on costs and complication rates, for instance.

In the early stages of his PSH, Dr. Schulman approached surgeons by explaining that non-participation in his PSH didn't mean their patients wouldn't still get good care, but that their outcome measures (length of stay, pain scores, etc.) would lag by comparison.

"When third-party payers, when patients are looking up this information on a website, they are going to be making choices based on the information that is out there," said Dr. Schulman.

RAPT Attention

With an experienced orthopedic clinical nurse specialist as co-chair and three surgical champions, the St. Francis PSH steering committee used the RAPT (rapid ambulatory predictive tool) criteria to select patients appropriate for an accelerated discharge pathway. Patients in this pathway were communicated to all team members (physical therapy, care management, etc.) via the surgical schedule.

The ability of the surgeon to set realistic patient expectations about post-surgical discharge was key to the St. Francis group's model.

"If the patient doesn't know they are going home post-op day 2, we found that it's very hard to change their mind. If they think they're going home post-op day 3, and then you say, 'Hey, you're doing great, let's go home a day early,' they feel a little bit rushed out. And it's very unlikely to be successful to get them out that day earlier."

Patient satisfaction scores have risen to around 90 percent, with pain management satisfaction at 93 percent. The number of patients who are likely to recommend the hospital rose to an impressive 96 percent. This striking outcome analysis has caught the attention of the hospital administration.

Results

The program rolled out in September 2014 with an average length of stay (LOS) of 3.4 days. The current LOS is 3.1 days. Complication rates fell from 4 percent to below 2 percent, blood transfusion rates fell from over 10 percent to just over 4 percent, and 30-day readmissions were reduced from just over 7 percent to under 2 percent.

Patient satisfaction scores have risen to around 90 percent, with pain management satisfaction at 93 percent.

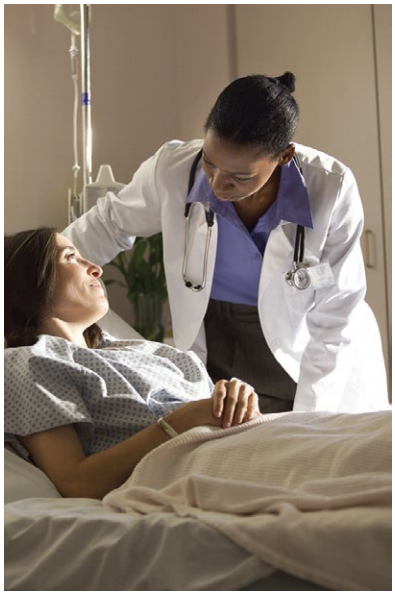
The number of patients who are likely to recommend the hospital rose to an impressive 96 percent. This striking outcome analysis has caught the attention of the hospital administration.

“Now that the C-suite is showing interest, they are working on getting us the support we need to continue this and take it to the next level and continue the motivation with this team,” he said.

St. Francis is planning to build an ambulatory surgery center (ASC), and some surgeons have expressed an interest in doing outpatient total joint surgeries. The PSH model will be key in moving forward if that is to happen.

With a current LOS of 3.1 days, Dr. Schulman said it’s not going to happen yet in an ASC. But the foundation has been laid.

"The economics are really clear – it's about contribution to savings. Be prepared to measure. Be prepared to be measured. Be prepared to benefit."



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