OR Manager

Patient safety

The OR's New Year's resolution: Improve safety of anticoagulants

Reduce the likelihood of patient harm associated with the use of anticoagulation therapy. That is a Joint Commission 2008 National Patient Safety Goal requirement, to be fully implemented by January 2009. The 1-year phase-in includes defined milestones during 2008.

Anticoagulants are a safety risk for surgical patients. Many patients are on these medications because they have prosthetic valves, atrial fibrillation, or are at risk for venous thromboembolism. For most surgery, anticoagulant therapy must to be suspended because of the risk of bleeding, leaving patients at risk for a thrombotic event such as a myocardial infarction or stroke.

Managing anticoagulant therapy is a challenge, especially for outpatient surgery, where coordination among primary care physicians, surgeons, anesthesiologists, and nurses must take place in a short time span.

Teams are likely to have their work cut out for them. In interviews, *OR Manager* found little consensus about who should lead the process—the surgeon or primary care physician, or what role the nursing staff should take. Reaching consensus will be the first task.

It will take a multidisciplinary effort, like that for developing preoperative antibiotics protocols.

"Until everybody assumes it's their responsibility, patients can fall through the cracks," says Bobbie Sweitzer, MD, an anesthesiologist at the University of Chicago Medical Center and a board

OR design & construction

Trends in OR design follow calls for safety, evidence-based practice

First in a series on OR design and construction.

Faced with dated structures, an aging baby boomer generation, and demands for new technology, hospitals are in the midst of a building boom. A 2006 report from The Center for Health Design (CHD) estimated that the US will spend $200 billion on hospital construction over the next decade.

ORs generate significant revenue and routinely use new technology, so it's not surprising they are a major part of building initiatives. Elizabeth Brott, principal medical architect for Kaiser Permanente in Oakland, California, says Kaiser plans to build more than 200 ORs in the next 7 years.

Here are some of the trends influencing what those ORs will look like, based on conversations with Brott and other experts in the field.

Building on evidence

Architects are following the lead of health care professionals' focus on evidence-based practice. The CHD says evidence-based design helps architects and organizations create environments that improve the organization's "clinical outcomes, economic performance, productivity, customer satisfaction, and cultural measures."

"Handedness" is an example of a research-based strategy relevant for the

Upcoming

MRSA protocols for the OR

Should preoperative patients be screened for MRSA? What other steps should be taken?

Heavy instrument trays

How ORs and central service departments are working to lighten the load.

Pressure ulcers

The OR's role in preventing this serious complication.

Editorial

Do you blog? Do you read blogs? It can be addictive once you get into it. I've read some lately that intrigued me. What is a blog? Short for web log, a blog is an online journal where you can write about a passion or pet topic. You can invite others to comment, too.

OR Manager has started its own blog. It's a place where you can comment on hot topics like the scope of the OR director's role or lateral violence.

Some blogs are intended for small audiences. Others are widely read and make news themselves—think of the Daily Kos or the Drudge Report. Blogs can be wacky or serious, senseless or thought provoking, sedate or profane.

The blog search engine Technorati.com currently tracks about 113 million blogs.

The most popular blog in the world is Boing Boing (www.boingboing.net), a "directory of wonderful things."

Here's a sampling from the health care blogosphere.

Running a Hospital

http://runningahospital.blogspot.com

Paul Levy, CEO of Beth Israel Deaconess Medical Center in Boston, started his blog to share his thoughts about hospitals, medicine, and health care issues. It's not at all stuffy. He blogs about what he's learned from other hospitals, health care initiatives in Massachusetts, and goings on at the hospital. His December blogs included a thank you letter from interns to nurses they worked with on the oncology unit and an item about shopping at an Armenian grocery. He lists some of his own favorite blogs and websites.

Wachter's World

www.the-hospitalist.org/blogs/default.aspx

On his blog, Robert Wachter, MD, a patient safety guru and a founder of the hospitalist movement, writes about everything from an interview he had with Don Imus, to rapid response teams, to thoughts on the medication error that happened to Dennis Quaid's newborn twins.

Health policy wonks

www.healthaffairs.org/blog

For the big picture of the health care system, read posts by some of the best thinkers on the blog hosted by the respected policy journal *Health Affairs.* You may encounter

> ## Take time to comment on the *OR Manager* blog.

comments by experts like Jeff Goldsmith and Linda Aiken, the nurse researcher from the University of Pennsylvania who has studied the link between nurse staffing and patient outcomes.

Nursing blogs

There is lots to blog about in nursing—if you're not too tired. Most blogs we found are by staff nurses, such nurses who work in the ED and critical care or those who work the night shift. They tell about the rewards and frustrations of caring for patients and dealing with the system.

A list of nursing blogs is at: http://mediblogopathy.blogspot.com.

A nurse leader's blog

http://mariesnursingsalon.wordpress. com

A nursing leader who blogs is Marie Manthey, who has an online salon. You'll feel like you've dropped by for a talk in her living room.

We hope to see you on the *OR Manager* blog. On a blog, your comments can be brief and informal. It's a way for you to let your colleagues know what you think on some of the important issues facing the specialty. ❖

—Pat Patterson

Post your comments on our blog!

Do you think the OR director's job has grown too big?

Do you have an opinion on lateral violence—nurses' undermining their colleagues?

Add your comments to our blog. The blog is at www.ormanager.com.

4

Lawsuits over device pricing settled

ECRI Institute and Boston Scientific in November settled their lawsuits over price transparency for cardiac devices. The terms were not disclosed.

ECRI Institute sued Guidant Corporation in 2006 over the right to publish pricing for cardiac devices as part of its benchmarking service. Guidant countersued, saying ECRI had interfered with its contracts, which it considers confidential. Guidant later sold its cardiac rhythm management business to Boston Scientific.

Boston Scientific would say only that the matter had been resolved. It would not make a further statement on price transparency.

ECRI Institute's president and CEO, Jeffrey Lerner, PhD, said the institute would continue to provide the benchmarking information. He also said the institute would continue to caution subscribers to review their contracts carefully, as it has done since pricing confidentiality became an issue.

The settlement does not resolve the larger issue hospitals contend with—how to know whether they are getting a favorable price on expensive devices like implantable defibrillators when hospitals cannot share and compare pricing. The devices can cost $25,000.

The scene now shifts to the public policy arena. A bill (S 2221) introduced in Congress in October would require

> ## The scene shifts to the policy arena.

companies to submit to the government average and median sales prices for certain implantable devices. The Centers for Medicare and Medicaid Services would then post the pricing on its website quarterly.

"The only alternative to legislation I can see is if the market self-corrects," Lerner says. In other words companies would no longer expect hospitals to sign confidentiality agreements or would allow disclosure for purposes such as benchmarking.

The bill, introduced by Senators Charles Grassley of Iowa and Arlen Specter of Pennsylvania, both Republicans, was sent to the Senate Finance Committee. No further action had been taken at press time.

Bill seeks price transparency

Senator Grassley said the bill's purpose is to "bring transparency to medical device pricing so there will be sufficient information available for market forces to truly work."

He continued: "Today, there is no level playing field when hospitals negotiate with device manufacturers. It shows. This is a major reason why many hospitals pay absurdly more than others for the same medical device."

He said the inflated prices some hospitals pay have implications for the health care system as a whole. Higher device prices mean more of the hospital's Medicare payment is taken up by the device cost, leaving less to spend on services, such as staffing, information systems, and quality improvements. Higher prices also factor into Medicare hospital payment updates, raising the cost of entitlement spending for taxpayers, he noted.

Said Lerner, "My belief is that the health care system would function far better for patients if hospitals were able to compare the quality, safety, and cost of the products they buy and determine which are better. To exclude prices from that comparison, I think is a fundamental error."

"If you're buying a house, you can find out what the last person paid for the house and what the price is now," he said. "Why shouldn't you be able to do that in health care? If market forces can't play out by themselves, can the government remove impediments to the market forces working? The alternative is a less market-driven health care system.

"As a nation, we need to decide where we stand on these pricing issues."❖

To download bill S 2221 and check its status, go to the government's website at http://thomas.loc.gov/. Enter the bill number in the search box.

Design and construction track at OR Business Management Conference

OR managers and directors who have a construction project in their future can get up to speed with a special track at the OR Business Management Conference May 19 to 21 in San Francisco.

The track includes an all-day seminar on Monday, May 19, and 4 breakout sessions on Tuesday and Wednesday, May 20 and 21.

All-day seminar
Planning New OR Suites

- **Zigmund Rubel, AIA**
  Principal, Anshen + Allen Architects, San Francisco
- **Jayne Byrd, RN, MSN**
  Associate Vice President, Surgical Services, Rex Healthcare, Raleigh, North Carolina

Designing an OR suite that will be up to date for the coming years is a major challenge. In this seminar, you will hear from an architect and director of surgical services who are veterans of OR design and construction projects. The speakers will discuss trends in OR design, the phases of a design and construction project, and the role of the surgical services director.

Breakout sessions
Building Green Surgical Facilities

- **Zigmund Rubel, AIA**
  Principal, Anshen + Allen Architects, San Francisco

Green, sustainable, and high performance are all terms associated with healthy buildings. This session will discuss the benefits of sustainable design, guidelines for health care buildings, and examples of how surgical facilities can become green. Energy, water, indoor environments, and waste considerations will be addressed.

Blurring Boundaries: Surgery and Interventional Radiology

- **Bill Rostenberg, FAIA, FACHA**
  Principal, Anshen + Allen Architects, San Francisco

Traditional boundaries between surgery and interventional radiology are eroding. Surgery is becoming less invasive, and radiology is more intervention-

OR Design & Construction

al. This session examines a new design prototype: the integrated interventional suite. The speaker will provide insight for designing flexible, state-of-the-art advanced surgical/imaging facilities that can accommodate future changes in practice, operations, technology, and culture.

Renovating Operating Rooms: OR Director's Role

- **Amy Bethel, MPA, CNA**
  Executive Director, Surgical Services, Iowa Health, Des Moines

OR directors across the country are faced with the challenge of remodeling existing ORs. This session will cover the steps of a construction project for an existing facility. The speaker will discuss steps to prevent infections during the construction project and how to communicate effectively with a multidisciplinary team. You will learn how to avoid the pitfalls of using old processes in the newly designed facility.

Designing Surgical Services for Evolving Technology

- **Ila Minnick, RN, MS, CNOR**
  Director of Perioperative and Emergency Services, William S. Middleton Memorial VA Hospital, Madison, Wisconsin
- **Nilay Deshmukh, AIA**
  Senior Healthcare Planner, Shepley Bulfinch Richardson and Abbott, Boston

A health care administrator and senior health care planner will investigate future surgical services design considerations that correspond to the rapidly changing practice of medicine. They will discuss design considerations to increase operational efficiency and reduce staffing needs while accommodating anticipated shifts in health care delivery systems. The role of the perioperative nurse in influencing standards for future designs will be discussed. ❖

A conference brochure will be available this month at www.ormanager.com.

CMS plan would put some Medicare DRG payments at risk

Medicare is upping the ante on quality. A new plan would put part of hospitals' DRG payments at risk based on their performance. Under the plan, called value-based purchasing, Medicare would cut DRG payments to all facilities by a flat 2% to 5%. The money would go into a pool that hospitals would have to earn back by meeting or exceeding certain quality benchmarks or by showing improvement over the previous year, according to the Nov 27 *Wall Street Journal.*

Congress would have to approve the plan sent to Congress Nov 21 by the Centers for Medicare and Medicaid Services (CMS). Approval in some form is likely because Congress called on CMS to develop the plan in 2005.

Value-based purchasing builds on Medicare's current quality reporting program. Since 2005, Medicare has paid a little more to hospitals that publicly report on certain measures. The CMS plan would replace that with a program that includes both public reporting and financial incentives for quality.

"Getting hospitals to report their quality measures was an important first step," said the acting CMS administrator, Kerry Weems.

"Now we are taking the next step of actually rewarding hospitals for the quality of care they provide Medicare beneficiaries."

CMS says the program should be implemented in a way that does not increase Medicare spending—which means there will be no new resources for hospitals to meet the expanded requirements.

Proposed quality measures

Measures hospitals might be judged on include:

- 17 process measures, including 2 affecting surgery: prophylactic antibiotics started and stopped on time
- 2 outcomes measures—30-day mortality from acute myocardial infarction and heart failure
- patient satisfaction measures from CMS's HCAHPS survey, a standardized survey of what patients think about aspects of care such as communication with caregivers, cleanliness, and quiet.

Key parts of the CMS proposal:

- A model would be developed for calculating a hospital's "total performance score" based on the quality measures. Hospitals would be scored annually based on whether they attain national thresholds or improve their performance over the previous 12 months.
- A hospital's incentive would be based on its performance score.
- Hospitals' performance would be reported publicly on the government's Hospital Compare website, which would be made more user friendly.

Fundamental shift

The plan is part of a fundamental shift. Pay based on quality is gaining momentum. Medicare has already said it will stop paying for some serious preventable events such as retained foreign bodies, air embolism, and hospital-acquired pressure ulcers. A number of health plans also have pay-for-quality plans for hospitals and physicians. For hospital executives, pay and bonuses are increasingly linked to quality and safety, not just the bottom line.

"This is a period where hospital administrators have to shift what they are accountable for," Jeff Selberg, CEO of Exempla Healthcare, Denver, recently told *American Medical News.*

Hospitals are concerned about the impact. Hospitals are already squeezed on Medicare.

Some 66% of hospitals lose money on Medicare, and 33% have a negative overall operating margin, according to the American Hospital Association (AHA). Medicare currently accounts for about 40% of charges in community hospitals. That's expected to increase as baby boomers age.

Some hospital administrators worry whether they will have the resources for the QI programs and information technology needed to meet the quality measures and extract the data needed to comply with the CMS program.

The CMS proposal presents a list of options rather than a blueprint, notes Tom Nickels, AHA's senior vice president for federal relations.

"What is clear is that redirecting 2% to 5% of overall payments to hospitals is too large an amount for a program that has such little proven results," Nickels says. ❖

The CMS report to Congress on value-based purchasing is at www.cms.hhs.gov/center/hospital.asp

Patient safety

member of the Society for Perioperative Assessment and Quality Improvement (SPAQI).

What will Joint Commission expect?

In meeting the Joint Commission requirement to improve the safety of anticoagulant therapy, a critical issue for perioperative services will be gathering information from the patients, says Michelle Pelling, RN, MBA, who consults on Joint Commission issues for the Propel Group, Newberg, Oregon.

Caregivers will need to determine if patients:
- have been taking anticoagulants
- were advised to stop taking them prior to surgery
- had a baseline INR (International Normalized Ratio) for blood coagulation drawn and if their INR results are at a safe enough level on the day of surgery to proceed.

For outpatients, the nursing staff will need to review the discharge instructions for anticoagulants with the patient and family. Instructions should include, for example, when to:
- resume the anticoagulant and at what dose
- have the next INR drawn
- make follow-up appointments with the primary care physician and surgeon.

Perioperative services may also have a role in monitoring and measuring the effectiveness of the anticoagulation protocol, such as collecting data on whether patients:
- followed the preoperative and postoperative protocols
- had any bleeding problems after surgery
- had bleeding complications or excessive blood loss during surgery.

Guidelines and resources

There is not a great deal of literature on

> ## "You have to build consensus first."

managing anticoagulants perioperatively, particularly for outpatients. Teams can refer to guidelines by Geerts et al for the American College of Chest Physicians, which include a risk assessment tool. The American Society of Regional Anesthesiologists has guidelines addressing the safety of peripheral nerve blocks on patients on anticoagulants.

The Institute for Safe Medication Practices has an evidence-based self-assessment that organizations can use to evaluate their anticoagulant process (see resources).

"Unless it's a spinal or epidural, there is no really good evidence that you can't perform blocks on patients who are on anticoagulants," says Dr Sweitzer. "Also, there's no evidence at all that you can't do a spinal [block] on a patient who's just on aspirin." If the surgeon is willing to operate on a patient with an anticoagulant, the anesthesiologist would probably be willing to perform a peripheral nerve block, she says.

Who should take the lead?

As a first step, by April 1, 2008, the Joint Commission expects organizations to assign leadership to oversee and coordinate meeting the anticoagulant requirement.

A key question is who should be responsible for developing the process, specifically:
- deciding whether patients suspend their anticoagulants before surgery
- ensuring patients stop taking their anticoagulants and their blood is normalized before surgery
- following up with patients to ensure they start taking their anticoagulants after surgery.

If there is no standard protocol, nurses tend to get caught in the middle when the surgeon, primary care physician, and

Warfarin and surgery

I. Recommendations for correcting warfarin-elevated INR prior to surgery:

1. For INR between 2.0 and 3.0, warfarin should be stopped 5 days prior to surgery.

2. For INR > 3.0, warfarin should be stopped 7 days prior to OR.

II. Recommendations for patients anticoagulated for recent venous thromboembolic event (deep vein thrombosis or pulmonary embolism):

1. Within the first month: surgery should be avoided; if necessary a venous filter or preoperative IV heparin or low molecular weight heparin (LMWH) after warfarin has been stopped is indicated.

2. After first month, IV heparin and LMWH are not indicated prior to OR.

III. Recommendations for patients prophylactically anticoagulated to prevent arterial thromboembolism (mechanical valve, atrial fibrillation, etc):

1. Within the first month: surgery should be avoided, if possible; otherwise, preoperative IV heparin or LMWH are indicated.

2. For mitral valve replacement, after the first month, preoperative IV heparin or LMWH is indicated.

3. For aortic valve replacement, after the first month, no preoperative IV heparin or LMWH is indicated.

Notes:

1. For minor procedures (excluding ocular or neurosurgical), consideration should be given to continuing anticoagulants at a reduced dose throughout the perioperative period.

2. INR should be checked on the day before OR to ensure normalizing value (INR < 1.2).

Source: Copyright © 2007. Clinical Advisory Board, Prompte. www. prompte.com

anesthesiologist disagree about whether patients who did not stop their anticoagulants should have surgery.

"Unfortunately, the answer to this question is not straightforward," says David Young, MD, an anesthesiologist and medical director of presurgical testing at Advocate Lutheran General Hospital, Chicago, who has been involved in developing the hospital's protocol. He is also a principal for Surgical Directions, a consulting firm, and a cofounder of Prompte, a company that develops preoperative screening software.

In his view, the hospital should take ownership of the protocol because of the need for coordination, particularly follow-up after discharge. In contrast, Dr Sweitzer believes the point person should be the primary care physician or the physician who prescribed the anticoagulant originally.

"Surgeons or the surgical facility shouldn't just assume it's OK to stop anticoagulants without knowing the indication," she says. Some patients require "bridging" with either low molecular weight heparin (LMWH) or unfractionated heparin while off warfarin. She adds that it is important to delay elective procedures until an adequate time of anticoagulation has occurred, typically 3 months after arterial or venous thromboembolism.

"The surgery center or hospital can develop protocols for surgeon and procedure preferences, but they need to consider the individual patient," Dr Sweitzer notes.

Who requires management?

Six groups of patients require management of anticoagulants pre and postoperatively, Dr Young notes:

- patients who have had cardiac valvular surgery in the past and are on anticoagulants

> ## We need better management of follow-up.

- patients who are on anticoagulants because they have had deep vein thrombosis (DVT) in the past
- obstetrical patients who had a DVT in a previous pregnancy
- patients with cardiac stents—both impregnated and nonimpregnated stents
- patients scheduled for vascular or cardiac surgery (often, he says, these patients should continue their aspirin up to the day of surgery)
- patients having ocular surgery, neurosurgery, or regional anesthetic.

Each group may be handled differently, depending on the physician, he says. Patients may be confused if they receive different information from the primary care physician, hospital, and surgeon.

Moving toward consensus

"You have to build consensus first. It has been our experience that once all the players reach consensus, they will feel comfortable doing the same thing across the board," Dr Young says.

He recommends starting with a meeting with hematologists, cardiologists, gynecologists, primary care physicians, surgeons, anesthesiologists, pharmacists, and nursing. The group can develop protocols for all groups of patients that consider the views of all the players. Then the protocols must be communicated multiple times to create awareness and comfort.

At Lutheran Advocate General, for patients having minor surgery, such as Johns Hopkins class I or II (nonneuro and nonocular procedures), there is a strong consensus that patients should stay on their aspirin.

For vascular and cardiac surgery patients, Dr Young recommends developing a grid with the procedures on the vertical axis and the medication names on the horizontal axis. A grid is then

completed for each surgeon. The grids are used by the presurgical testing center so consistent advice is given. For example, for arteriovenous fistulas, one doctor wants all of her patients to remain on aspirin and clopidogrel (Plavix). But she wants her peripheral-arterial patients to remain on aspirin alone.

For ocular surgery in patients having regional anesthesia (spinal or epidural) or for neurosurgery, Dr Young says patients must come off their anticoagulant and have a normal INR if they are taking warfarin.

To help coordinate the process, he helped create a form letter with patients' preoperative information and agreed-upon anticoagulant management that is sent to all of the patient's caregivers.

Even with consensus, he says more work is needed on follow-up after discharge, especially for the elderly.

"We need better management of follow-up and clear written instructions for patients and their families," he says. "We feel our job in the preoperative clinic includes contacting high-risk patients after surgery. That includes patients who need management of anticoagulants."

Coordinating by phone

At the surgery center at the Springfield Clinic, a multispecialty group practice in Springfield, Illinois, the patient's surgeon is in charge of the process.

"We work only with the surgeon because the surgeon is ultimately responsible for the patients while they're with us," says the assistant administrator, Mary Stewart, RN, MS. The clinic has 80 surgeons, 7 ORs, and performs 25 to 40 surgical cases a day.

A major help was investing in nurses who contact patients by phone preoperatively and postoperatively. About a year ago, patients' electronic health records become available in the OR, allowing nurses to access the patient's record for the past 3 years.

If the H&P was performed by the primary care physician and does not have orders for the anticoagulant, the nurse phones the surgeon's office.

In addition, 3 anesthesiologists start reviewing cases 2 to 3 days before surgery. If the anesthesiologists do not agree on whether a patient should be taken off anticoagulants, they call the surgeon ahead of time. That relieves the nurses of trying to resolve conflicts on the morning of surgery.

Postoperatively, nurses attempt to call all patients at least 2 to 3 times to check on their status and make sure they understand their postop orders.

Prescribing physician in charge

Though she believes all parties should be involved, Dr Sweitzer thinks the physician who prescribed the anticoagulant should be in charge of the process before and after surgery. The primary care physician should also be involved in the decision to stop the anticoagulant and the need for bridging.

A surgical facility should be careful about taking on the role of coordinating anticoagulant therapy because it could be a liability risk, she adds.

Though a postoperative phone call is a good practice, Dr Sweitzer says patients should receive written discharge instructions about when to resume their anticoagulant therapy and when to see their physician for a follow-up appointment.

She recommends that surgical facilities communicate with the physician's office before the patient is discharged to let the physician know the patient had surgery, was off anticoagulants, and was instructed when to resume the anticoagulant and to see the physician. Then it is up to that physician to follow up. ❖

—*Judith M. Mathias, RN, MA*

References

American Society of Regional Anesthesiologists. Second Consensus Conference on Neuraxial Anesthesia and Anticoagulation. *Reg Anesth Pain Med.* 2003;28:172-97. www.asra.com/consensus-statements/2.html

Bell C M, Bajcar J, Bierman A S, et al. Potentially unintended discontinuation of long-term medication use after elective surgical procedures. *Arch Intern Med.* 2006;166:2525-2531.

Douketis J D. Perioperative anticoagulation management in patients who are receiving oral anticoagulant therapy: A practical guide for clinicians. *Thrombosis Res.* 2003;108:3-13.

Dunn A S, Turpie A G. Perioperative management of patients receiving oral anticoagulants. *Arch Intern Med.* 2003; 163:901-908.

Geerts W H, Pineo G F, Heit J A, et al. Prevention of venous thromboembolism: Seventh ACCP conference on antithrombotic and thrombolytic therapy. *Chest.* 2004;126:338S-400S.

Joint Commission 2008 National Patient Safety Goals. www.jointcommission.org/PatientSafety/NationalPatientSafetyGoals.

Kearon C, Hirsh J. Management of anticoagulation before and after elective surgery. *N Engl J Med.* 1997;336:1506-1511.

O'Donnell M, Kearon C. Perioperative management of oral anticoagulation. *Clin Geriatr Med.* 2006;22:199-213.

Pasternak L R. Preoperative assessment of the ambulatory and same-day admission patient. *Welcome Trends Anesthesiology.* 1991; 9(5):3-11.

Anticoagulant resources

Joint Commission International Center for Patient Safety

Anticoagulant therapy tools
www.jcipatientsafety.org/22818/?query=wallet%2Ccard

Institute for Safe Medication Practices

Example of a Failure Modes and Effects Analysis for Anticoagulants.
www.ismp.org/Tools/FMEAofAnticoagulants.pdf.

ISMP Medication Safety Self-Assessment for Anti-thrombotic Therapy in Hospitals
A tool for assessing safe practice relating to antithrombotic therapy, with a web-based scoring system.
www.ismp.org/selfassessments/asa2006/Intro.asp.
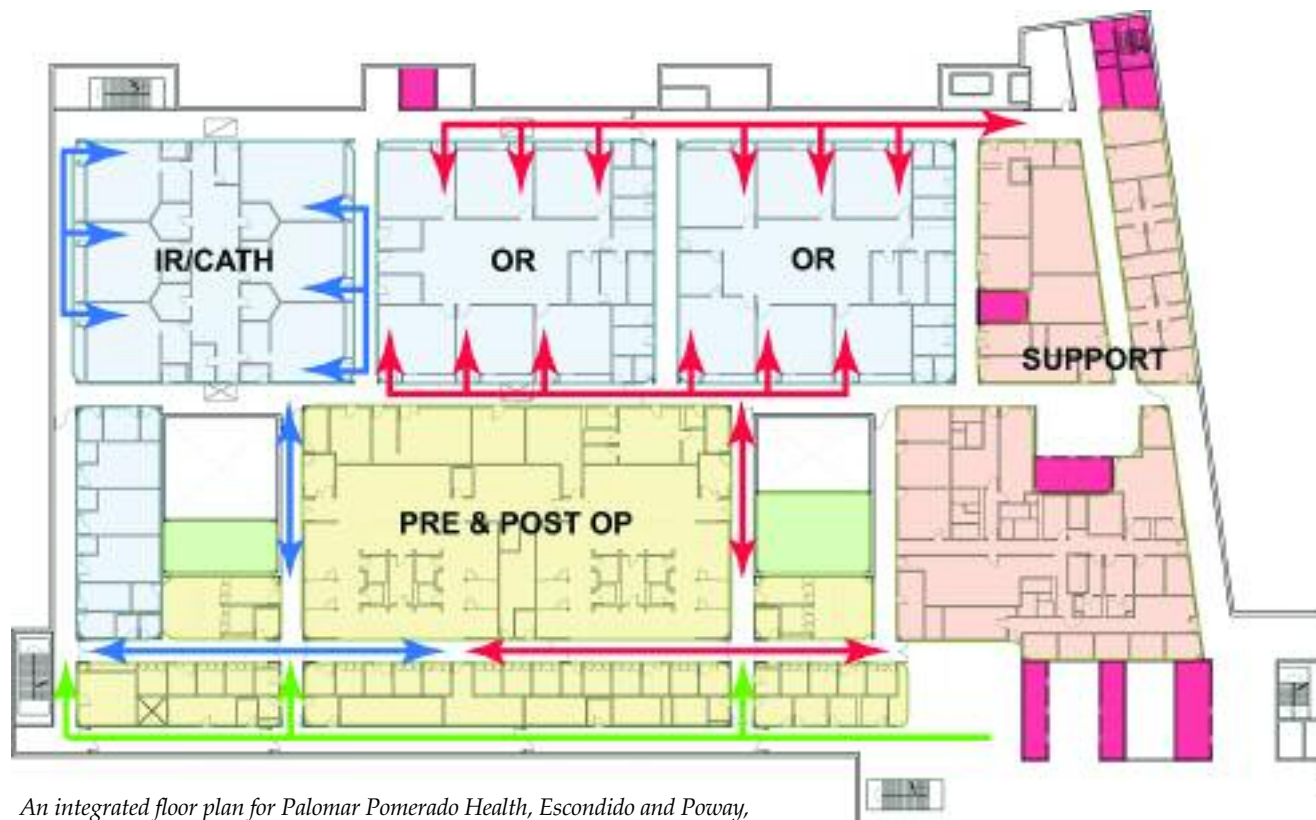
An integrated floor plan for Palomar Pomerado Health, Escondido and Poway, California. Copyright Anshen + Allen. Reprinted with permission.

OR. In this concept, each OR room is configured the same so staff, surgeons, and anesthesiologists know the exact location of what they need.

"No matter what room the staff is in, they know which direction to turn to open the drawer where they can find what they're looking for," says Brott. This simple strategy can reduce medical errors and increase efficiency.

OR Design & Construction

Blurred lines lead to similar designs, greater flexibility

In recent years, the lines between surgery, interventional radiology, and interventional cardiology have blurred, leading to the need for more flexibility in design, according to Bill Rostenberg, principal and director of research at Anshen + Allen, an international architecture firm (www.anshen.com). "Surgery is becoming increasingly reliant on real-time imaging during the procedure," he says. "The OR is becoming increasingly information-technology intensive, with computer processors and servers claiming space alongside more traditional equipment."

These changes have led to more similar designs between interventional and OR rooms, a trend Rostenberg says will continue. "The OR room of the future will look and feel like a cath lab. You'll have an electronics control room that allows integration with radiology, endoscopy, and the cath lab."

Interventional rooms are already moving closer to the OR. "The trend is to move interventional radiology and interventional cardiology to the same floor as the OR," says Brott. Both types of interventional rooms look identical, and all rooms are designed to maintain similar levels of aseptic practice.

Location on the same floor makes sense because interventional procedures may need OR backup, and more anesthesiologists are working in interventional rooms, says Brott. At some Kaiser facilities, the staff for the OR and the interventional areas share space, including patient preoperative and postanesthesia care units (PACUs) and staff lockers.

Another effect of blurred boundaries between interventional and OR services is more flexibility. Rostenberg says some ORs are "multipurposing" rooms so they can be used as a cath lab or an OR, and he sees that trend continuing.

Flexibility also helps future plans.

"You need to configure the design so that when new technology is available, OR rooms can be converted to interventional rooms," says Zigmund Rubel, principal with Anshen + Allen, San Francisco.

Rubel adds that interventional rooms require more technical support. One way to meet that need is to plan for the ability to convert the sterile core to a technology area for staff who support equipment such as MRI units.

"Space is precious," says Rubel, who notes that the size of both ORs and interventional rooms is increasing.

One of the challenges, he says, is that organizations are focusing on providing for more patient privacy. That goal can compete with efficiency. For example,

Rendering of new operating room for Palomar Pomerado Healthcare, Poway, California. Courtesy of Anshen + Allen.

having dedicated rooms for preoperative and postoperative patients or allowing patients to return to the same room where they were admitted is advantageous from a psychosocial standpoint but creates logistical issues. A better alternative is to convert rooms, for example, changing a preop room that is heavily used in the morning to a postop Stage II room in the afternoon when more patients are recovering.

Learning to share

Optimal use of space creates the need to share, which can be a challenge among surgeons, radiologists, and cardiologists. For example, Rostenberg says intraoperative use of MRI is increasing but not enough to be able to operate a separate MRI in the black financially. Locating the MRI on the perimeter of the OR where nonsurgical patients can access it allows facilities to improve the financial profile. Controlled access is key to making this arrangement a success.

Organizational vision can encourage collaboration among the specialties.

"The vision will determine if it's a collaborative or a competitive multispecialty arrangement," says Rostenberg.

He emphasizes the need for collaboration at the highest levels, with the CEO, surgeons, and interventionalists working together. He also suggests having broad representation from user groups but trying to keep the total number as small as possible (usually 8 to 10).

What's the magic number?

In some cases, the PACU is the base for patients recovering from interventional procedures in addition to those recovering from surgery, which makes determining the number of PACU beds an issue.

"You'll need more PACU beds for a cath lab than an OR because procedures are shorter in the cath lab," says Rostenberg. He says a good rule of thumb is 3 to 3.5 PACU beds for each cath lab. That number also depends on the types of procedures done. For example, if a cardiac cath lab does a high number of lengthy electrophysiology procedures, the number of needed PACU beds might be higher.

"That doesn't mean you have one big PACU with patients mixed in," says Rostenberg, "You have zones or pods of beds. But you can gain flexibility by hav-

ing smaller zones and being able to reallocate beds from one area to another." Typically, different staff members care for each type of patient, although crosstraining may become more common in the future.

What you see is what you get

It's difficult mentally to convert a flat blueprint into a 3-dimensional view of what the final constructed area will look like. To make that process easier, architects use computers to create 3-D models. Some organizations are investing in room mock-ups so that staff can test the layout before construction begins.

In 2004, Brott used a mock-up of an OR in the footprint of a hospital under construction so the staff could validate the size and location of equipment and workspaces. Soon Brott will be running simulations in the Sidney Garfield Center in San Leandro, California, a 37,000 square-feet warehouse where full-scale mock-ups of planned designs can be set up.

Materials flow

Substerile rooms between 2 or 3 ORs are being replaced by a sterile core: 6 or

Evidence-based facility design

A report on evidence-based design analyzing 700 articles found links between the physical environment and patient and staff outcomes in 4 areas:

- reduced staff stress and fatigue and increased effectiveness in delivering care
- improved patient safety
- reduced stress and improved outcomes
- improved overall health care quality.

The report and a scorecard on evidence-based design are on the Center for Health Design website at www.healthdesign.org/research/reports/ physical_environ.php.

more ORs grouped around a service core that has supplies for the OR.

"A sterile core offers more flexibility and service," says Rubel. "It requires a little more space overall so it's more expensive, but operationally it allows for a quicker turnaround of supplies."

Brott says Kaiser is consolidating sterile processing departments (SPDs) to achieve financial and efficiency advantages. Kaiser has one SPD in the Northwest that serves 131 outpatient facilities and 12 ambulatory ORs. Many Kaiser facilities use a bar-coding system for instrument trays, making it easier for SPD to track down missing items. Flash sterilization is performed in a dedicated room, and materials are transferred in special containers to the ORs by cart.

A family experience

Surgery has become a family experience in ambulatory care centers, and architects have responded by softening institutional edges. "Durability and maintenance aren't always taking precedence over comfort," says Rubel. One example is the use of more indirect lighting and wall sconces so patients don't have to look at bright ceiling lights as they are rolled down the hallway

Induction rooms are particularly popular for pediatric patients. The family member is present during induction, and then the child is moved to the OR. Rubel notes that induction rooms don't need to take up much space. "They are usually in the PACU or preop areas but can even be in a small alcove designed for that purpose."

Natural lighting is making inroads in the PACU and procedure rooms. Use of natural lighting in the OR and interventional rooms is more limited because of the expense due to environmental control and engineering needs, such as insulation for windows and shielding for imaging equipment.

Staff not left out

Architects focus on ergonomically designed workspaces, for example, adjustable worktables. One approach that is becoming popular in the PACU is decentralization. "Nurses are based closer to the patients instead of at a single nurses' station," says Rubel, who acknowledges that such a shift requires a cultural change.

As interventional and surgical procedures overlap, Rostenberg says to expect to see cross-training of PACU staff to be able to care for both surgical and interventional patients, an idea he says is "somewhat controversial."

Some facilities are providing amenities such as showers and bike lockers. "One easy thing to do is to put the staff lounge adjacent to a window," says Rubel.

Getting the most for your money

Flexibility and amenities come with a price tag. Developments such as multipurpose rooms, better IT infrastructure, and the use of "soft space" (space that can be adapted in the future) will raise costs. The alternative, though, is to design space so tightly that it limits opportunity for growth.

"It might cost a little more for the soft space," says Rostenberg, "but one could argue that when you need to grow and change, you'll spend less money renovating." ❖

—Cynthia Saver, RN, MS

Cynthia Saver is a freelance writer in Columbia, Maryland.

Reference

Ulrich R, Quan X, Zimring C, et al. Role of the Physical Environment in the Hospital of the 21st Century. Center for Health Design. September 2004. www.healthdesign.org/research/ reports/physical_environ.php. Accessed July 27, 2007.

A building boom for ORs

The building boom continues, as ORs add to their space and update their current rooms. The boom is fueled by the need to increase capacity, provide for new technology, and meet structural requirements.

From the 2007 *OR Manager* Salary/Career Survey:

Are you adding or planning to add new ORs?

- Currently adding 23%
- Plan to add in next 12 mos 20%
- No 57%
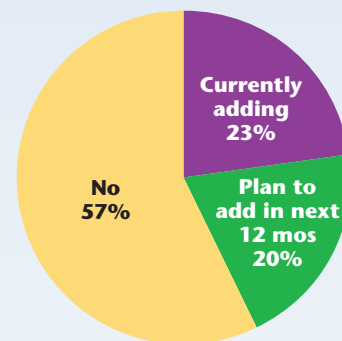
Reasons for adding ORs

Increase capacity	57%
Accommodate new technology	27%
Replace old facility	25%
Other reason	1%

Are you currently renovating or planning to renovate ORs?

- Currently renovating 23%
- Plan to renovate in next 12 mos 21%
- No 56%
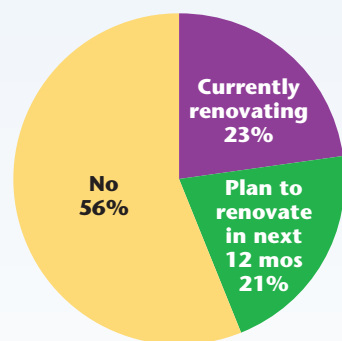
Reasons for renovating ORs

Accommodate new technology	76%
Meet structural requirements	36%
Other	30%

Other reasons include: Adding capacity, updating, adding new services, and improving efficiency or patient flow.

An award-winning interventional suite

The award-winning new 8-story E.W. and Mary Firstenburg Tower at Southwest Washington Medical Center in Vancouver, Washington, includes a dedicated Heart and Vascular Center with 6 interventional rooms and 2 ORs. The hospital is one of the first in the country to offer an integrated center with interventional radiology, cardiovascular, neurology, and open-heart services.

The 13 ORs on the second floor are equipped with touch-screen technology and a suspended equipment system that keeps the floors free of cords and lines.

The ORs, perioperative rooms, and patient rooms are standardized and "same handed" to enable patients and staff to orient themselves quickly, which helps prevent errors and increases efficiency.

The facility is a winner of a 2007 Award of Excellence from *Modern Healthcare* and a Citation of Merit from *Healthcare Design* magazine. NBBJ, Seattle, was the project architect. ❖

First floor Heart and Vascular Center

Legend
1. Entry
2. Lobby
3. Visitor elevator
4. Patient/ support elevators
5. Preadmission testing
6. Outpatient pharmacy
7. CVAD waiting
8. CVAD pre and postop
9. CV OR
10. Biplane room
11. Cath lab
12. Staff support
13. Building support

Suspended equipment keeps rooms free of obstacles like electrical cords and oxygen lines.

The 13 new ORs have touch-screen technology, flat-panel monitors, and a flexible design that allows for easy reconfiguration of the room. Images courtesy NBBJ Architects. Copyright © 2007, Benjamin Benschneider.

The integrated surgical and interventional suite serves 6,000 patients.

A report card on OR information systems

The report card for OR information systems is out. Users gave their systems scores that were a little higher in 2007 than in 2005. Leading the pack was USA, with Meditech in second place and McKesson Horizon in third. The average overall score was 77.4 out of 100.

The scores are from KLAS Enterprise's report on surgery management systems, published every 2 years. The report captures how OR clinicians and hospital IT specialists think their OR software is performing.

Rankings have shifted, with Meditech moving from third to second place, and McKesson jumping from seventh to third. USA was first both times.

OR software gets lower scores than health care IT products in general, says Jason Hess of KLAS, but the gap is narrowing.

The scores don't necessarily correspond with how robust implementations are at client sites, Hess cautions. The lowest scoring vendors for OR systems, such as GE and SIS, have some of the highest percentages of modules implemented. On the other hand, top scorer USA has the lowest percentage of modules implemented, with only 47% of customers live on nursing documentation, for example. That compares with 96% for SIS and 95% for Cerner. USA currently has 11 installations for its perioperative system and 15 for its OR schedule module, or less than 1% of the market, according to HIMSS Analytics, a unit of the Healthcare Information and Management Systems Society.

More modules live

ORs have more modules live than in 2005.

Nearly all participants (92%) are live with OR scheduling, and 84% use online nursing documentation. The biggest gains were in materials management and nursing documentation. All of the vendors saw gains of more than 10% in materials management implementations except Cerner, McKesson, and USA.

Still a missing piece—interfaces and integration, with 64% saying they lack essential interfaced data. The interface gap varies by vendor. Only about one-fourth of Cerner and GE users reported needing interfaced data (26% and 28%),

compared with 43% for Meditech and 52% for SIS.

About a third, 36%, said no pieces were missing. But the meaning of "integration" may be limited, Hess notes.

"When we ask in interviews, 'Is a nurse on a med-surg floor able to go into the electronic record and see information from the OR?' some will say, 'I hadn't thought about that.'

"In one interview, an OR manager said the server for the OR system was under her desk. It was very much a stand-alone system. But when I asked her what interfaced information was missing, she said, 'Nothing.'"

Anesthesia documentation slow to catch on

Very few—5%—have implemented anesthesia documentation.

"It's surprising how little the needle has moved on anesthesia documentation," says Hess. "When I talk to vendors, almost all tell me they are asked about anesthesia documentation in RFPs and RFIs. But we weren't able to document much of an increase in 2007 compared with 2005."

Among the challenges—getting anesthesia providers to embrace the technology and getting the anesthesia module to

KLAS overall performance scores

Vendor	2007 score (out of 100)	2005 rank
1. USA	89.1	1
2. Meditech C/S	82.0	3
3. McKesson Horizon	78.1	7
4. Picis	77.5	4
5. Cerner	76.5	5
6. SIS	71.9	6
7. Mediware	70.2	9
8. GE	70.0	8
*CQI	86.4	
*Epic	85.5	
*McKesson ORSOS (Per-Se)	85.4	
Overall average	**77.4**	

Does not meet minimum KLAS standards for statistical confidence or is not the currently marketed product.

Source: KLAS Enterprises, 2007. Reprinted with permission.

Perioperative system market leaders

- GE Healthcare 7.3%
- Epic Systems 6.0%
- McKesson 24.4%
- Meditech 19.4%
- Other 16.8%
- Cerner 14.0%
- Picis 12.1%
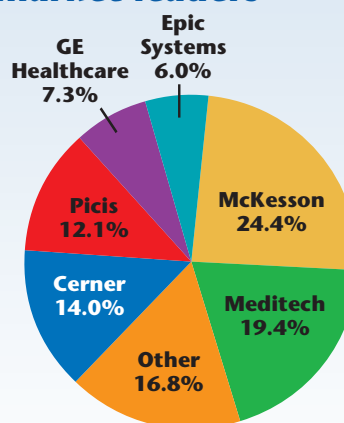
Source: HIMSS™ Analytics Database (derived from Dorenfest IHDS+ Database™).

PNDS impact on organization
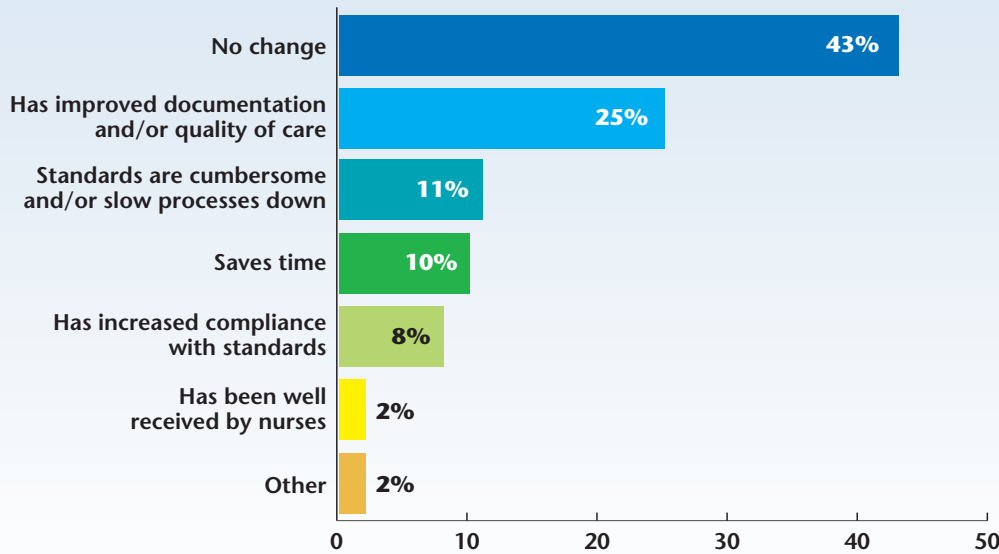
Source: KLAS Enterprises, 2007. Reprinted with permission. N = 61.
PNDS (AORN's Perioperative Nursing Data Set)

AORN's standard nursing language PNDS (Perioperative Nursing Data Set). Cerner is the leader, with 70% of its users saying they have adopted PNDS. Other vendors reported 30% to 50% adoption. This is the first time KLAS has asked about PNDS.

In interviews with KLAS, users gave PNDS mixed reviews.

"PNDS has been great for our nurses. It is a real time saver," said one. Another said PNDS had streamlined standards for the nursing staff. "The plan of care policy now includes every standard that is considered to apply to every case. Then the nurses have to add only standards unique to a patient," this person said.

Said another: "We put the data out there and let the nurses click the one they want. It is sweet, and the nurses love it."

Some found it cumbersome. "They are very lengthy," one noted. Another commented that the way PNDS was set up in their software "makes nurses angry because it takes 6 screens to click through the standards."

One person noted that when the state department of health came in recently for a review, "it was beneficial to be using the PNDS."

interface with the surgery management system.

Some users told KLAS they found the anesthesia products were immature, didn't match their work flow well, or were difficult to interface with the hospital's electronic health record.

A mature market

OR software is a mature market, and those looking to purchase new systems are mainly seeking a replacement for their current system. In making a decision, there are 2 camps, notes Hess—chief information officers (CIOs) tend to favor enterprisewide systems, but clinicians often prefer a department-specific system based on their needs.

"CIOs say they like the information of going with a system that has a single database like a Cerner or a Meditech," says Hess. "Then they don't have to worry about having to create interfaces to get a niche system to talk to the core system.

"But when you talk to the clinical folks in the OR and ask how the enterprisewide system works for surgery and their workflow, those vendors sometimes score lower."

Market changes

There have been a few changes in the players. PerSe ORSOS, acquired by McKesson in 2007, is no longer being marketed. McKesson will continue to support ORSOS, but McKesson's Horizon Surgical Manager will be the company's surgery management product going forward, Hess notes. McKesson has also partnered with Docusys to further develop its anesthesia documentation software.

Epic has been coming up fast, with about 6% of the market, according to HIMSS Analytics. KLAS validated 14 organizations live on Epic OpTime, its OR product, less than the 15 KLAS requires to include a system in the main body of its report. Users give Epic high marks for the quality of its code and the ability to customize its products, Hess notes. But they say OpTime needs to mature and to better match clinicians' workflow. The company also needs to better monitor its turnover and lack of experience with support and implementation staff, KLAS found in interviews.

USA and Mediware announced in October that Mediware will transition its OR system customers to USA's ORMS software. Mediware will focus instead on blood and medication management.

Surgical Information Systems (SIS), bought out by a private equity firm in 2006, brought in a new CEO, Edward R. Daihl, in 2007. GE Centricity, which has struggled, also has new leadership for Centricity Perioperative.

Progress on PNDS

About 40% of participants are using

How study was done

The KLAS Surgery Management report is based on data submitted to KLAS by users of OR systems plus interviews with 463 users to validate the data and collect more in-depth feedback. Of those interviewed, 44% were IT managers or directors, 31% were OR managers or directors, and the rest were other types of clinicians and administrators.

Organizations that contribute data to KLAS and are interviewed for the special report receive a free summary of the study. Others can purchase the report. ❖

More information is on the KLAS website at www.healthcomputing.com.

Automated inventory frees up nurses

With a swipe of a barcode, a perioperative nurse documents supply use in the patient's record, helps create an accurate patient bill, and starts the process to reorder the product.

Kaleida Health, a 5-hospital network serving western New York State, has pulled off what many organizations strive for, an integrated automated supply replenishment system for perioperative services and other clinical departments. Kaleida believes it is one of the few organizations in the country to have a fully integrated, barcode-driven system.

Technology, of course, has enabled the project. But just as important is a cohesive team that works across departmental lines, notes Rick Tresmond, director of materials management.

In 2000, like many organizations, Kaleida had a cumbersome system that required too much nursing time. Nurses had to record supply usage on charge sheets. A billing person had to submit the charges. Supply levels were checked and orders placed manually. The manual system resulted in delays in posting charges and getting accurate decision support data. A physical inventory was performed once a year, and materials management staff kept their fingers crossed that a big adjustment wasn't needed the following year when the inventory was repeated.

Replacing paper

The paper-driven system needed to be replaced. The goal was an automated system that would be able to replenish supplies by having nurses capture data during cases by scanning barcodes (sidebar, p 17).

Today, all 5 of Kaleida's surgical sites are on auto replenishment. In all, 15 clinical departments are up, including cath labs, angiography, and GI labs, accounting for about $10 million in inventory and $35 million in spending annually.

Senior leadership supported the project even though they knew it would be labor intensive in the beginning, and Kaleida was in a financial turnaround.

"Our leadership team really understood the importance of understanding our supply chain and being able to give nurses and directors the information they need to make good business decisions," Tresmond says.

To convince senior leadership the effort

could pay off, Tresmond and his team started with a grassroots inventory project that reduced inventory by 30% and with an overall reduction of $1.3 million. After the CFO agreed to back the project, Tresmond set out to get buy-in from clinical department directors.

"The philosophy of materials management is that we want the nurses to focus on patient care. We take as much responsibility for supplies as we can to take the burden off of them," Tresmond says.

He pointed out the countless hours that nurses and administrative personnel could save if the process was more automated. He was also honest about the amount of time and change involved.

"I tell them that the first 30 to 60 days are going to be a little rough," he says. But he assured them the nurses would have support from their perioperative IT coordinators and materials management.

"When we go back 60 days later and talk to the nurses, they love it. That's because when they scan their items, and if it doesn't work, they hand it to the materials person, and we fix it."

Support for nursing staff

Scanning barcodes wasn't a big transi-

tion for circulating nurses. Most supplies for a case are already listed in the preference card, which is automatically brought into the patient's electronic record when the nurse selects the case. (Preference cards are kept up to date with the materials management system daily, as described in the sidebar.)

The only items nurses need to scan are those added to the case. Documentation is done on wireless, stand-alone PCs.

"The billing and inventory replenishment are all built on the clinical documentation," says Tresmond. "We used to say to nurses, 'You need to charge for it.' Now we say, 'You need to document it in the clinical record,' which is what is important to nurses."

Nurses were already familiar with how to look up supplies in the system using model numbers, notes Hollis Strassle, RN, perioperative coordinator for Kaleida's Women's & Children's Hospital of Buffalo.

Nurses also have backup. Each surgical site has a perioperative RN IS coordinator who has experience with the online OR clinical documentation system, Surgical Information Systems (SIS). Each site also has at least one materials management employee on call 24/7.

Rick Binder and Hollis Strassle demonstrating the technology.

How auto replenishment works

The steps for setting up and maintaining Kaleida's auto replenishment system.

Setting up the supply inventory system

- Using Lawson software, each disposable supply is given a materials management number and bin number. The manufacturer's barcode is also scanned into Lawson.
- Items are forwarded to the purchasing department, which verifies pricing, unit of measure, and contracts.
- Items are forwarded to the chargemaster team to ensure each item has a unique charge code and billing code.
- Meanwhile, perioperative IS coordinators cleaned up the OR item master and made sure every item was identified with both the OR and materials management data elements.
- When these steps are completed, the materials management staff works with the OR staff to set reorder levels.
- Once every item in the OR inventory matches in the OR item master and Lawson item master, a physical inventory is conducted and the counts loaded into Lawson.
- The morning of go live, a report is automatically generated to show what will be ordered that day.
- Lawson compares the amount on hand with the reorder points and identifies items below the reorder point for order placement. The order points are reviewed with the department and changed when necessary.
- Once reviewed, the order is sent automatically to the purchasing department where the order is placed by EDI (electronic data interchange), autofax, or in rare cases, by phone.
- Recently, a paperless process was developed for adding a new item to

Lawson. The process ensures the product has a charge code, proper pricing, and approval from clinicians. The process, which previously could take up to a month, has been reduced to 5 days.

Daily reconciliation

- The system includes a daily reconciliation process called "item master replication," which syncs data in the Lawson system with the data in the clinical support, chargemaster, and clinical department systems.
- An additional process run daily compares data on physician preference cards to data in Lawson so cards are always synchronized with the materials available for use. This enables the system to generate accurate pick lists and reduces the times nurses must leave the room during a case to get supplies.

Documenting supplies at point of use

- During a case, the circulating nurse documents chargeable supplies not on the preference card using barcoding technology. The nurse scans the barcode, and the product is documented in the electronic record. For low-cost nonchargeable items such as sponges and dressings, inventory is maintained by materials management personnel using par levels.
- After a product is scanned, the product is charged for, and the inventory is debited behind the scenes without human intervention.
- If any product sent through the system doesn't match or the quantity is insufficient to debit the amount identified, the auto replenishment operations team is notified and works to resolve the issue.

If a product doesn't scan or the nurse can't find a supply in the system, the nurse simply hands the package to the materials staff.

"We'll come back with a valid product number and charge code and make sure to tell them how to get the product into the clinical documentation," Tresmond says.

"We're like ducks paddling like crazy under water in the early stages of implementation to make it seem smooth on the surface. But it's important that we don't add any workload on our clinical staff."

Getting nurses' buy-in

Millard Fillmore Gates Circle Hospital in Buffalo was one of the first to go live

with barcoding in the OR. To prepare the nurses, "we teased them a little bit," says Sue Bohn, RN, BSN, CNOR, perioperative coordinator.

"We put the barcode readers in the rooms, and the nurses would say, 'When can we start using these?'"

The nurses were already used to searching for items using the model number.

"Once all of the barcodes were loaded, they could start using the scanners, and they were loving it. We started calling ourselves Home Depot for a while."

Once 2 Kaleida sites had gone live, it was easier to convince the others it could be done.

Each surgical site decides what quantity of supplies will be included in auto replenishment and how the data will be captured. For supplies such as orthopedic screws and plates that don't easily lend themselves to barcoding, the OR can select methods such as developing barcode books or sheets that can be scanned. Keeping this up to date is challenging because products and catalogs numbers change frequently.

Team approach

Strong teamwork is a major reason why Kaleida was able to implement an integrated system successfully, Tresmond emphasizes. Most hospitals have a vertical organization chart with a chain of command.

"This project is different—there is more of a horizontal integration," he says. Though team members report to their superiors, "for this project, we report to each other. We brainstorm and shoot out ideas constantly. If we try something, and it doesn't work, there are no repercussions."

In addition to Tresmond, the team includes staff from clinical and financial information systems, nursing coordinators from the clinical departments, purchasing and chargemaster staff, and materials management staff who manage daily operations. They meet weekly, more often if necessary, and report quarterly to a steering committee and the CFO.

Syncing databases

A key piece of the process is daily syncing of the supply databases, called "item master replication." The 3-way process, developed by Rick Binder, systems analyst, compares the SIS and Lawson item masters to identify any differences. The

item masters are also harmonized with the charging and clinical support databases.

Initially, before going live, the perioperative nurse IS coordinators have worked through the time-consuming process of cleaning up the OR item master and making sure every item is identified with both OR and materials management data elements.

Kaleida uses the manufacturer's barcode for about 95% of products. For the few that don't come barcoded, Kaleida generates its own barcodes. A more recent challenge are the 2-dimensional barcodes, which look like dots in a square. So far, only a few vendors are using these, and Binder and the group are working on a solution.

What's the cost?

The cost of hardware for barcoding is negligible, about $150 per barcode reader. Most of the software and the computer workstations were already installed. The greatest cost is the labor to get auto replenishment ready to go live.

"We've probably added 5 or 6 FTEs for auto replenishment itself," Tresmond says. "But what we've done is redirected our resources. We haven't increased our labor costs by much, but we have added value to the supply chain." Materials management staff who once processed orders now spend time on other duties. RNs and billing staff who used to write and enter charges are freed for other responsibilities.

A lot of the return on investment is intangible. "There are so many process improvements, you can't even list them all," says Russ Reimondo, director of financial and resource management IS&T.

One example is the ability to identify slow-moving inventory items, stop reordering them, and redirect them to other Kaleida hospitals that need them. Tresmond has documented over $750,000 worth of inventory redirected from January through September 2007.

"This is one example of the kinds of programs we've put together to make everybody's life better without increasing the workload," he says. ❖

A team from Kaleida Health will present a breakout session on their auto-replenishment project at the OR Business Management Conference May 19 to 21 in San Francisco. Information is at www.ormanager.com.

ORs are moving to a more seamless supply chain system

Creating a more seamless system for OR inventory and charging often has been hampered by information systems that don't talk to each other, or don't talk easily. Humans in the OR and materials management may not talk much either. Gradually, these barriers are coming down, and hospitals are taking a more integrated approach.

In the past, many departments installed "best of breed" systems that met their needs best. Now more are seeing the value of a single enterprisewide solution, says Jeanne Parkes, MA, of the J2 Group, St Petersburg, Florida, a consulting firm that has worked extensively in surgical services IT implementation. There's also growing recognition that more synchronized systems and processes are needed to reach business goals, adds J2 Group's Jeanne Lattanzio, RN. Organizations "realize there needs to be a multidisciplinary effort between finance, purchasing, materials management, and the OR," Parkes says.

Online OR nursing documentation has been one driver of change, they note. Perhaps 50% of OR documentation is about supplies, which means taking a broader view of documentation than in the past.

Traditionally, managing the supply chain meant purchasing a product, receiving it, distributing it, and making sure the product information was entered in both the OR and materials management item files. Now it includes making sure the item is added to the preference card, and nurses are charting it. These expanded functions are "making people have a conversation they didn't need to have before," Parkes observes. "This takes visionary leadership and collaboration."

Success factors

Some critical elements for success include:
- Resources to maintain the quality of the OR's database and sync it with the materials management database. "This will allow you to get the case costing reports that drive operational and budget decisions," says Lattanzio.
- Policies and procedures to ensure data is standardized.

> **"**
>
> **Involve nurses early and often.**
>
> **"**

- Accurate preference cards and pick lists, which enable accurate inventory management and charging.
- Systems that help nurses to be as efficient as possible in charging. "Vendors need to continue to streamline the process to as few keystrokes as possible," says Parkes.
- Better naming conventions and data standards for surgical supplies and instrumentation. Currently, organizations have to reinvent the wheel to come up with a naming convention useful to both clinicians and materials managers. Data entry fields need to be large enough to allow entry of useful terms.
- Education and support for the staff so the naming convention and data standards are followed consistently.

There's now agreement among hospitals, software vendors, and materials management departments that a more integrated effort is needed, Parkes notes. "I think a lot of progress has been made—there's just more progress to be made," she adds.

Preparing the nursing staff

Involve nurses early and often if you plan to have them begin charting supply usage online in the OR.

"The nurses need to be involved pretty much from Day 1, at least with information," says Helen I. Blanton, RN, MS, MA, HID-CAAT, who until recently was senior clinical applications systems analyst for PeaceHealth in Oregon, which is implementing OR online charting and perpetual inventory systems for 5 hospitals.

OR Business Management Conference

May 19-21, 2008

Hyatt Regency
San Francisco
at the Embarcadero Center

RI Hospital addressing safe-site processes

Rhode Island Hospital's leadership team, in collaboration with independent consultants and expert physicians, is working to address processes that led to 3 wrong-site procedures in 2007.

The hospital, located in Providence, was reprimanded and fined $50,000 by the state health department after the third incident, which occurred Nov 23.

Two of the incidents happened at the bedside. One occurred in the OR, involving a subdural hematoma in an 86-year-old man admitted through the emergency department.

The Nov 23 case, which occurred in the neurosurgical ICU, was performed by a resident to treat a subdural hematoma on an 82-year-old patient. Before entering the skull, he realized the error and operated on the correct side, the hospital said.

"We are extremely concerned about this continuing pattern," said the state health department's director, David R. Gifford, MD, MPH. Though he said improvements had been made in the operating room, "they have not extended these changes to the rest of the hospital."

In the OR case, which took place in July, the hospital and state health department found the surgeon's reliance on memory was the root cause of the error.

According to the health department's findings, the surgeon's nurse performed the history and physical and obtained the consent, and there were issues with the documentation.

Under a consent order from the state medical board, the surgeon, J. Frederick Harrington, Jr, MD, voluntarily agreed to a 10-week suspension of his surgical practice, which ended in October. The hospital restricted his surgical privileges, and they remained restricted at press time.

Bedside site verification

In the Nov 23 case, the state's preliminary finding was that the site verification policy was not followed. The compliance order requires the hospital to ensure that a physician attends all neurosurgical-type procedures from beginning to end, that the operating physician completes a time-out checklist, and that the information is verified both by the physician and nurse or technician assisting with the procedure.

Both Rhode Island Hospital and the state health department have been open in describing the incidents and the corrective action plans. The state has posted its findings on its home page.

OR Manager has been in communication with the surgical services leadership at Rhode Island Hospital. The leaders have said they are interested in sharing the lessons learned from their experiences when the process is complete. ❖

In PeaceHealth, nurses will be expected to scan barcodes for this purpose. "Give them some ownership—that's the big thing," Blanton says. "You can say to the staff, 'This is the potential impact on your work flow. Give us input on what you think would work.'"

Dedicate staff resources

Preference lists drive the system. Maintaining them has to be a priority, and that takes resources, advises Jayne Byrd, RN, MSN, associate vice president, surgical services for Rex Healthcare, Raleigh, North Carolina. At Rex, preference lists are called resource maps.

"Resource maps drive your cost per case, your physician and staff satisfaction, your utilization, and your bottom line," she says. Too often, updating preference lists is delegated to staff nurses, who don't have time to do it consistently.

"No single person can take care of patients and remember all of the changes that need to be made," she says. "You end up with a fragmented system and incorrect cards, and it just spirals downward."

Two resource map coordinators update preference cards for the Rex system, which has a total of 35 operating rooms. One, an OR veteran, works from home, updating the cards online.

Develop a naming convention

The supply database must use terminology that is understood both by clinicians and materials management.

"When you go through and look up an item for a preference card, it has to be something a nurse can recognize," Blanton says. "You also need to have the catalog numbers, product numbers, and whatever else is needed to identify the item for purchasing. This must be done collaboratively between the OR and materials—operating in silos is a red flag."

Names also need be alphabetized consistently. It doesn't work, for example, to name sutures differently as suture, 3-0, nylon; suture, nylon, 3-0; nylon suture, 3-0; and so forth. If naming isn't consistent, nurses won't be able to look them up reliably using a word search. If it is too time-consuming and difficult to look up items added during a case, the staff may not do it, leading to lost charges.

Rex, rather than having 2 naming conventions for nursing and materials management, standardized to a single description for products.

"Our materials management department offered us the opportunity to name the OR products, and we embraced the idea," Byrd says. "The outcome was that we agreed on using the actual product description from the box or packaging label."

That is the manufacturer's recognizable name, she notes. "Product numbers change. The accurate name can save a lot of time and help avoid back orders. It simplified work for everyone. Our system is better because of it, and it allows the materials management department to own the work in support of the OR and be more effective in doing their job. It was a win-win."

Clean up the database

The database must be reviewed to make sure names in fact have been entered consistently and accurately.

"This needs to be done manually at least once," Blanton says. "It's ugly, and it's time-consuming. But once it's done right, and you have established how it's going to be done going forward, your problem is solved." ❖

> **The J2 Group will present a seminar on OR information systems at the OR Business Management Conference May 19 to 21 in San Francisco. Information is at www.ormanager.com.**

Practical project to improve on-time starts

A data-driven project dramatically improved on-time starts in our operating rooms at St Boniface General Hospital, a 507-bed academic tertiary care facility in Winnipeg, Manitoba, Canada. The previous year's performance had averaged 75%. The goal was set to achieve a 90% rate.

The operating room management, along with a variety of key pre-procedure departments, developed the following strategies for achieving this goal.

The admitting department

Statistics were collected for 4 weeks to evaluate current practice.

- Statistics were reviewed to capture average registration times.
- The priority for registration was changed. Registration clerks are instructed to register patients scheduled for 7:45 am first cases of the day before other patients. Patients having cardiac procedures are also prioritized because additional preparation time is required.

The following areas were identified for improvement:

- New computer software was implemented to allow for more preregistration.
- Registration clerks' hours were readjusted to maximize efficiency during busy early hours.
- The process was changed to ensure clerks were processing OR patients on a priority basis rather than a first-come, first-served basis.
- Additional registration help was enlisted from the emergency department prior to opening of the admitting department at 6:15 am.

Day surgery/inpatient units

- Time data was collected to capture transportation time from the admitting department. Average admission time on the unit included the patient changing into a hospital gown, recording vital signs, collecting lab work, administering medications, and completing the consent process.
- To address delays in blood collection, a requisition flag/stamp was developed to signal these samples as a priority. The lab would be alerted to fast-

> "On-time starts improved to a 90% rate."

track these specimens with a direct callback of results to the OR.

- Arrangements were made through the preanesthesia clinic to have some patients come in for their blood work the afternoon before their surgery date.
- A point-of-care rapid International Normalized Ratio (INR) meter was evaluated to reduce the wait time for results by 1 hour.

The operating room department

The data collection tool for the OR was designed to capture a variety of elements over a 4-week evaluation period:

- patient's arrival time in the preop holding unit
- surgeon's arrival time
- anesthetist's arrival time
- time to OR theater [operating suite].

A unit clerk was situated in the area to record all of these times.

Once the data was reviewed, clear trends started to emerge (pie chart).

OR remedies

These were steps we took to help reduce OR delays. To increase awareness of our goals:

- Memos were sent to the department of anesthesia and department of surgery and to all surgeons and anesthetists on staff by the OR management group.
- Announcements were made to the OR staff at the weekly in-service session.
- A memo was sent to all surgical wards and the emergency department.

The memos outlined the expectations with regard to arrival times in the OR. Surgeons were advised either to arrive in

Reasons for delays
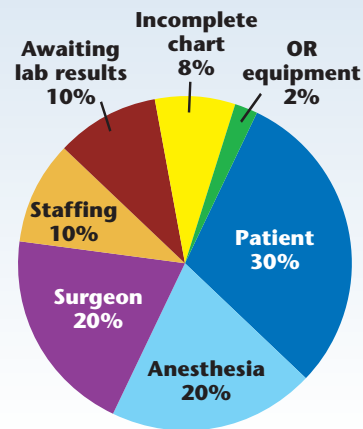
the OR by 7:30 am or to notify the preop holding staff that they were in the hospital. If there were outstanding patient preparation issues, such as the surgical consent or patient queries, they could be addressed at this time, preventing any potential delay. The surgeons were informed that if the consent process had not been completed, their patients would not be transported to the OR.
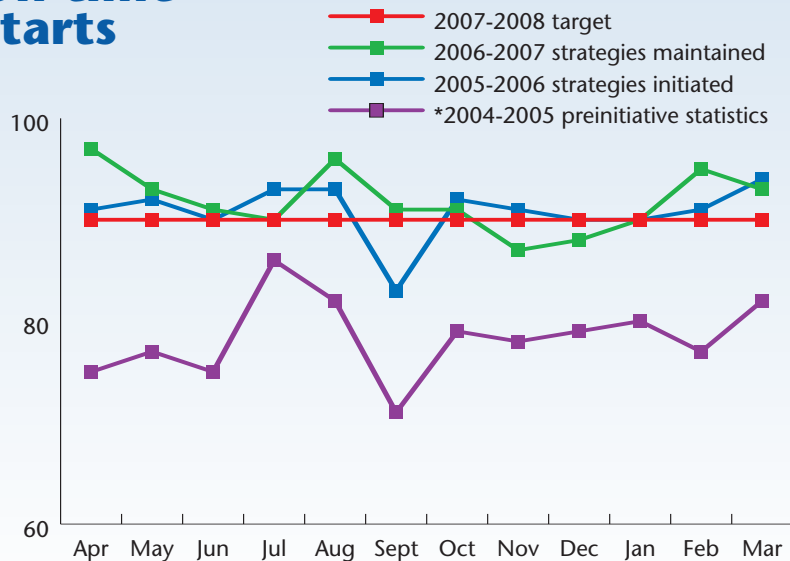
Staffing remedies

Steps were taken to address staffing:

- Two additional nurses were assigned to the preop holding unit in the early morning from 7 am to 7:30 am. These nurses would admit the patient that they would care for in the OR. This practice provided for continuity of care and helped to decrease patients' anxiety levels.
- A clinical resource nurse position was established to coordinate the many facets of patient care during the immediate preoperative phase. This role allowed for follow-up of deficiencies and consistent tracking of performance, which contributed to an increase in on-time starts.
- Hours for OR health care aides (HCAs) were adjusted, with 3 to start at 6:50 am. This adjustment enabled the transportation process to flow smoothly.
- New hair clippers were evaluated and purchased to further expedite hair removal. That enabled patients to

On-time starts

Legend:
- 2007-2008 target
- 2006-2007 strategies maintained
- 2005-2006 strategies initiated
- *2004-2005 preinitiative statistics

Source: St Boniface General Hospital, Winnipeg, Manitoba.

have hair clipped as close to surgery as possible, reducing the risk of surgical site infection.

- A ward clerk was assigned to assist in the preop holding unit from 7 am to 8 am. The clerk's primary function in addition to data collection was retrieving lab results, resolving blood typing issues, and paging surgeons and anesthesia providers.
- To provide additional transportation assistance, we enlisted the help of our early-start instrument attendants to assist in moving patients to the OR.

Improvement techniques

To promote improvement overall, we relied on the following techniques:

- Gentle transition to improve efficiencies. Though a marked improvement was expected following implementation of our strategies, gradual progress was demonstrated, given the multidisciplinary compliance required.
- Continued measurement of progress and data collection throughout the process. If you stop measuring progress, you will stop improving your efficiency.

Results

With the remedies in place and the goal set, we started to see results. The months of strategic planning with all of the team, including the peripheral departments, yielded favorable results (line chart).

When the following month's statistics were reviewed, the on-time starts had catapulted to 90%. Our goal had been reached. Subsequent months revealed even higher than expected results of 93% to 95%.

These favorable statistics were shared with all staff. A scorecard was developed and posted, highlighting the successful increase in on-time starts. On occasion, if we saw a dip in performance, the data would be reviewed, and areas of concern would be targeted for improvement. Continuous evaluation of performance was necessary to achieve the results we desired.

Communication with all team members is crucial to successful operating room on-time starts. Continued followup with the surgical wards regarding efficiencies and reasons contributing to delays was carried out.

Late arrival trends continued for a small group of OR team members, which were dealt with by the OR management group.

The sharing of statistical data with all staff continues to be useful to keep awareness levels high. The progress demonstrated in the chart and graph was positive reinforcement for staff of our successful achievement.

UV lighting versus laminar flow in total joint surgery

A study comparing laminar air flow and ultraviolet lighting for infection control in total joint procedures in one hospital found the odds of infection were 3.1 times greater with laminar air flow.

Researchers from St Francis Hospital, Mooresville, Indiana, studied infection rates for 5,980 joint replacements performed by 1 orthopedic surgeon from July 1986 to July 2005.

In September 1991, ultraviolet lighting was installed in the ORs. All procedures performed before installation were done with horizontal laminar airflow. After installation, all procedures were done with ultraviolet lighting without laminar airflow.

In all, 47 of the joint replacements became infected. The infection rate with laminar airflow was 1.77%, whereas the infection rate with ultraviolet lighting was 0.57% (p < 0.0001). The total hip infection rate decreased from 1.03% to 0.72% (p = 0.5407) with ultraviolet lighting. The total knee infection rate fell from 2.20% to 0.50% (p < 0.0001).

Eye and skin protection from UV light were needed for both patients and staff, the researchers noted. They concluded that UV lighting appears to be an effective low-cost way to lower the risk of infection after total joint surgery. Equipping an OR with ultraviolet lighting costs about $2,000, compared with about $200,000 for laminar air flow. ❖

— Ritter M A, Olberding E M, Malinzak R A. J Bone Joint Surg. *2007;89:1935-1940.*

Conclusion

The bar was set high. We wanted to improve our on-time starts significantly to a level of 90% or greater. The challenge was embraced, and the team set about to meet its objective. The goal was reached and continues to be maintained. This achievement was only realized through the creation of a true team environment. ❖

—Diane L. Marion, RN
Clinical Resource Nurse,
Operating Room
St. Boniface General Hospital
Winnipeg, Manitoba, Canada

The 5 W's: A blueprint for counseling

OR managers who document their use of the "Five W's of Employee Counseling" will never lose a wrongful-termination suit, a veteran manager says. Heather Carelock, RN, MPA, CNOR, who has had 35 years of experience in managing ORs and surgical services, says she's learned the importance of a documentable, consistent approach to dealing with employee problems.

The Five W's Carelock recommends are not original with her, she stresses. "I heard them years ago, and have used them at 5 hospitals. They always work," she says.

The Five W's are simple, she adds. An employee who is being counseled needs to be told:
- What is wrong.
- Why it is wrong.
- What you expect the employee to do about it.
- By When, and
- What will happen if the employee doesn't follow through.

Coaching, then counseling

Carelock says there is a difference between counseling and coaching. Counseling is the more formal, disciplinary process. "I think of coaching as more positive," she says. Coaching is a less formal approach to employee improvement and, in the team-based management style favored for ORs, can be used by managers and staff alike..

"It can be as simple as stopping a team member in a hallway and saying, 'You did a really good job of anticipating the surgeon's needs in there. Next time, though, you might want to be more careful about pulling everything on the preference card.' Always offer praise with your recommendation," she advises.

"Coaching is basically helping somebody get better who's already doing a good job," Carelock says. "It's not just managers who should be doing it. All team members are responsible for helping to build the team and for helping individual team members get better so the team is working together to improve patient care."
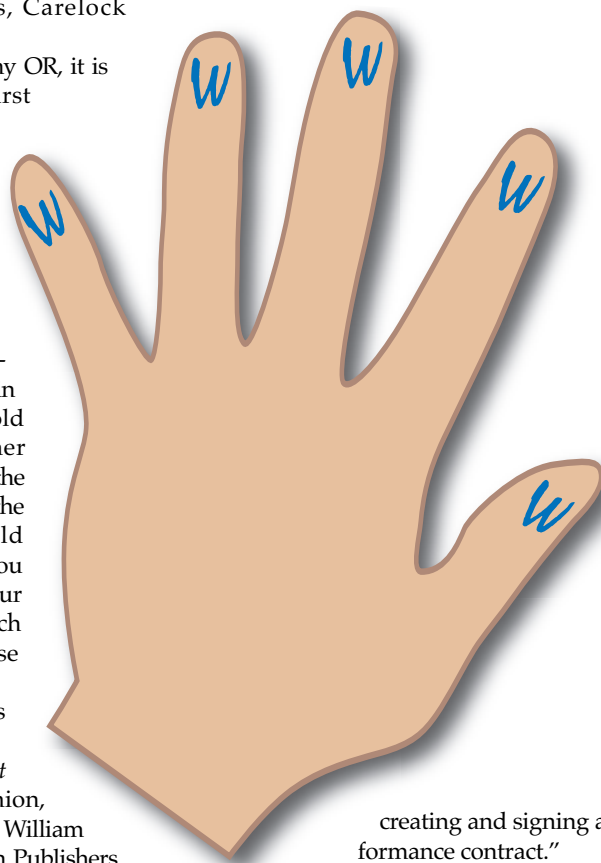
Team participation in employee improvement has come about in the ORs in the past 20 years, Carelock says.

"For instance, in any OR, it is important that the first case start on time," she says. "So your expectation may be that all team members for that first case are in the OR by 7 am to start the first case by 7:30. But you have one employee who always strolls in around 7:20. In the old days, one of the other nurses would talk to the manager. These days, the team members would say, 'Hey, we need you here on time for all our sakes.' Peers are much more effective in these situations."

She recommends *Team-Based Health Care Organizations: Blueprint for Success* by Jo Manion, William Lorimer, and William J. Leander, MD (Aspen Publishers, Inc, 1996) as a reference for OR managers seeking to create or improve a team-based organization.

"It will help you establish a culture for team-based leadership," Carelock says. "There are several chapters on expected behaviors—the intangibles that make or break a team. And it is helpful when your team begins to think about creating and signing a performance contract."

More pressure is needed

Sometimes coaching and peer pressure are not sufficient.

"Maybe the person who is tardy responds, 'Sorry, girlfriend; that's too bad.' At that point, the manager or team leader has to step in," Carelock says.

Applying the Five W's in employee counseling

Five W's	Example
1. What is wrong.	Employee is consistently tardy.
2. Why it is wrong.	It is keeping the team from starting the case on time.
3. What you expect the employee to do about it.	To be on time from now on.
4. By When.	Starting now.
5. What will happen if the employee doesn't follow through.	The employee will receive a written warning, and the formal disciplinary process will start if he or she doesn't come in on time.

RN schools still turning away applicants

Enrollment in baccalaureate nursing programs grew 5% in 2007. But nearly 31,000 qualified applicants were turned away from BSN programs because of a shortage of faculty and other resources, according to preliminary data from the annual survey by the American Association of Colleges of Nursing (AACN).

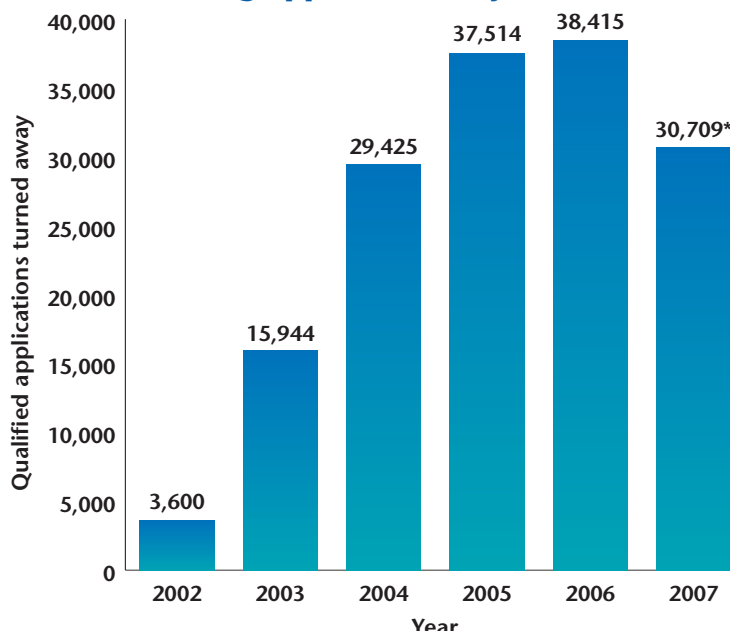The number of graduates from entry-level baccalaureate programs increased by 7.4% from 2006 to 2007.

Given the demands of today's health care system, AACN and other nursing leaders say the greatest need in the nursing workforce is for nurses trained at the baccalaureate level and above.

AACN says it is helping to address the faculty shortage by working to get federal funding for professional nursing programs.

Federal funding sought

Hospitals and nursing groups were also lobbying Congress in early December to keep funding levels for nursing education in the fiscal year 2008 Labor, Health and Human Services (HHS), and Education appropriations bill. The original bill was vetoed by President Bush in November. Congress approved a stop-gap funding measure as it continues work on appropriations. If the bill had not been vetoed, it would have included additional funding for nursing education and faculty development.

Data from the American Hospital Association shows that in December 2006, there were about 116,000 vacant RN positions nationwide. According to HHS, the US will need more than 2.8 million nurses in 2020 but could have as few as 1.8 million as more RNs retire, and demand for health care services increases. ❖

—www.aacn.nche.edu

RN schools turning applicants away

Preliminary 2007 data.
Source: American Association of Colleges of Nursing. www.aacn.nche.edu

---

And at that point, the employee's attitude and behavior probably would trigger the formal disciplinary process. That's when the Five W's come in handy: they are the blueprint for that first, verbal (but documented) counseling session. Carelock has them printed on a small, laminated card and hands out copies when she conducts seminars on employee improvement issues.

"The Five W's can be used for something as clear-cut as time and attendance problems or something less clear-cut, like performance issues," Carelock says. She explained how the Five W's could be used in the example of the tardy employee (sidebar, p 23).

Verbal warning must be documented

Then comes the most important part, Carelock adds—this first verbal warning must be documented.

"Most hospitals have a form the employee signs acknowledging that she or he has received the initial, verbal warning," she says. "That's the step managers often skip—but it is essential, because if the employee's unsatisfactory behavior continues, and you haven't documented your initial warning, then you have to call her back in and start again with a verbal warning. Every time an employee is being suspended or terminated, your human resources department is going to say, 'Show me the paper she signed to acknowledge that she knew what she did was wrong.'"

Carelock notes that the usual sequence for hospital disciplinary action is:
- initial warning/documentation of verbal counseling
- written warning
- written warning with suspension
- termination
- other action.

She advises managers to have another person in the room with them for even the initial, verbal counseling session.

"For some employees, you don't know how they will react, so I always have someone with me. For the first session, it's usually the OR manager and a team leader," she says. "If we move closer to termination (which she defines as any employee who has to be counseled twice), I recommend having the manager and an HR person present."

Carelock stresses that the HR department should be in from the beginning of the counseling process.

"It's important for communication to be stellar between the manager and HR," she says. "You need to bring in HR people well before you're even close to firing somebody. Because there is nothing worse for a manager than having to take someone back whom she's fired. That has a negative effect on the whole team." ❖

—Kate McGraw

Kate McGraw is a freelance writer in Santa Fe, New Mexico.

Editor's note: Carelock has been using the Five W's throughout her career. We would like to credit the source. If anyone knows the source, please contact us at ppatterson@ormanager.com.

CMS updates infection control guidelines

New surveyor guidelines spell out what Medicare expects from hospital infection control programs to help fight current threats like multidrug-resistant organisms, disease outbreaks like flu or SARS, and bioterrorism.

The hospital conditions of participation for infection control have not changed. The revised guidelines from the Centers for Medicare and Medicaid Services (CMS) outline in more detail what state surveyors will be looking for.

National standards

CMS says the infection control program is supposed to follow national standards and guidelines, including those of the Centers for Disease Control and Prevention, Association for Professionals in Infection Control and Epidemiology, and AORN.

Specifically, surveyors are to check if the hospital:

- maintains a sanitary environment (examples of areas surveyors will check are food preparation and storage, refrigerators, ice machines, air handlers, autoclave rooms, venting systems, inpatient rooms, labs, waste handling, surgical areas, supply storage, and equipment cleaning)
- develops and implements infection control measures related to hospital personnel, such as immunizations and restricting infected staff from work
- mitigates risks associated with patients who have infections on admission, for example, by using isolation precautions
- mitigates risks contributing to healthcare-associated infections, such as implementing an antibiotic protocol for surgical patients and maintaining aseptic practices
- conducts active infection surveillance
- monitors compliance with infection control requirements
- coordinates with federal, state, and local officials on disease threats.

Hospital execs responsible

The guidelines say the hospital's CEO, medical staff, and director of nursing will be held responsible for linking the infection control program with quality improvement and staff training.

The guidelines issued Nov 21, 2007 were effective immediately. ❖

The revised Interpretive Guidelines for Infection Control were sent to state survey agency directors and will become part of the State Operations Manual under 42 CFR 482.42 at tags A-0747 through A-0748 and A-0756.

Dashboards can help ASC stay in the black

The coming year may prove to be one of the most important in the life of your ambulatory surgery center (ASC). You will begin to see the effects of Medicare's revised ASC payment system and will want to monitor closely exactly how the new rule financially affects your ASC.

Use of financial dashboards can help you identify financial problems facing your ASC, see where you need to make changes, and allow you to monitor and gauge the success of your efforts.

Financial dashboards are spreadsheets you develop and populate on a daily, weekly, or monthly basis that provide critical information—such as money in accounts receivable, collections, appeals, and case volume—to analyze the success of your business, says Debbie Mack, MSN, CASC, vice president of operations for Chicago-based National Surgical Hospitals, who gave a presentation on financial dashboards at the American Association of Ambulatory Surgery Centers 2007 meeting in Denver.

If you effectively track this information, you will identify areas you need to target to improve your operations. Several types of financial dashboards can help ASCs during this challenging year.

Tracking accounts receivable

One of the most important figures to track is how long your money is sitting

> **The number of incorrect payments could increase.**

in accounts receivable (AR).

"The AR analysis tool is good because it's about all of those days (your payments) are out there," she says. "We may start seeing the days grow just because nobody can figure out how to pay us" because of the final Medicare payment changes.

To create an effective AR analysis tool (illustration), you should track monthly:

- **Gross AR balance:** Total gross billed charges in AR.
- **Net AR balance:** Amount you expect to actually collect during the month.
- **Gross days in AR:** Average number of days all of your claims have sat in AR. Strive for a benchmark of less than 55 days, Mack says.
- **Net days in AR:** Average number of days before you received payments. Average net days in AR should be at 45. You will also want track AR aging in

this dashboard by running an aging report in your billing software. Gather the number of claims aging in 30-day buckets (0–30, 31–60, 61–90, 91–120, 121–150, and 151–180 days).

After running the report, analyze every bucket to see how often you receive payments. Mack suggests you work to make sure 75% of your AR is less than 90 days; 91–120 and 120–150 buckets should not exceed 10% each; and you do not want more than 5% sitting in AR for 150 or more days.

Your ASC may have been overwhelmed with preparing for the final Medicare rule changes, but your payers might also find the changes a challenge.

"It'll be interesting to see if Medicare implements (the final rule's changes) on time," Mack says. "You can expect to see Medicare days climbing. Your days will probably climb just because Medicare has difficulty adjudicating those claims. You may also want to watch for other payers who will be following Medicare's reimbursement schedule; you might start to see those AR days climb, too."

Know your financial classes

Track this data by examining gross days in billed AR by financial classes. Your billing software likely places certain payers into financial classes. Learn how the software is set up and where your payers are grouped.

Accounts receivable dashboard

Month	Jan	Feb	Mar	Apr	May	June
Working days						
Accounts receivable section:						
Gross A/R $ balance						
Net A/R $ balance						
Gross days in A/R						
Net days in A/R						
AR aging by discharge date						
0-30 days						
31-60 days						
61-90 days						
91-120 days						
121-150 days						
151-180 days						
Total A/R						
Gross days in billed A/R by financial class						
Blue Cross						
Commercial						
HMO						
Legal						
Medicaid						
Medicare						
PPO						
PPO/Medicare						
Private pay						
Research						
Worker's compensation						
Total						

Source: Debbie Mack, National Surgical Hospitals.

Your financial classes may include:
- Blue Cross.
- Commercial: Mack typically defines this as out-of-network payers and does not include preferred provider organizations (PPO) in this class for reimbursement tracking purposes. Expect the number of days in AR for out-of-network payers to be particularly high because of the tendency for these payers to look for any excuse not to reimburse you.
- Health maintenance organizations (HMO).

- Medicaid.
- PPO: Strive to keep your managed-care contracts at less than 60 days in AR. Include a clause in your contracts requiring these payers to pay you within 45 days.
- Private pay: You want this at zero days because hopefully your center is efficient at collecting money up-front.
- Workers' compensation.

As you track these classes, watch for significant fluctuations. "Some of your PPO contracts may be tied to Medicare reimbursement, so if those buckets start to climb, or the days start to climb, then you'll know you have a problem in that area," Mack says.

A collections dashboard

A collections analysis dashboard will allow you to see how much money each financial class owes from month to month. Determine a monthly collections goal. The easiest method of determining a goal is to add the net revenue of the previous 2 months and divide that figure in half.

If you miss your goal for several consecutive months or come significantly

Daily dashboard

	M	Tu	W	Th	F	Total	Average
Cases performed							
Staff hours							
Registry staff hours							
Cash collections							
Cash expenditures							
Cash balance							

Bills dropped							
Bills on hold pending information:							
Dictation delay							
Need patient info							
Transcription delay							
Awaiting coding							
Other							

Source: Debbie Mack, National Surgical Hospitals.

under it in one month, tracking how much money each financial class brings in monthly will help identify the cause for the decline. If one financial class declines considerably, contact payers causing the drop to determine the reason, especially if you see an increase in appeals. This may indicate your contract is not loaded correctly.

Consider tracking over-the-counter dollars received to see how much you collect in co-pays and deductibles on the day of service. If this figure is lower than you expect, work to improve your ASC's up-front collections efforts, such as conducting insurance verification prior to surgery and calling patients before their date of service to make sure they understand their financial responsibility.

Appeals could increase

Under the new payment system, ASC payment groups are changing from groupers to ambulatory payment classifications (APC) beginning in 2008. This could cause the number of incorrect payments to increase as ASCs and payers adapt to using APCs.

"I expect those managed-care companies that follow Medicare methodology to pay incorrectly," Mack says. "Make sure you have a strong appeals program in place. We're going to see an increase in number of appeals."

To help ensure you do not miss opportunities for appeals, create a dashboard to track the number of appealed claims and the amount of these claims.

"Keep an appeal log so you can constantly track how many appeals you've processed that month," Mack says. "Let's say your appeals dropped way off (one month). Begin to question why. For example: Did we get a new payment analyst? Are the appeals sitting on somebody's desk? By tracking these issues, you may be able to catch these problems before you get low on cash."

Tracking appeals can also help identify trends with payers. For example, if you have a managed-care contract that includes a carve-out for implants, but the payer does not pay when you send an invoice for an implant, track these reoccurrences. If you bring this to the payer's attention to no avail, when you renegotiate the contract, share your observations about the payer's failure to honor the

contract. Use this as leverage to include a clause in your new contract that will give you a percent of charge on the implants.

Case volume

If the final rule leads you to make significant changes to the type and number of procedures your center performs, create a dashboard (illustration) to track how many cases you perform each day.

"If they were making changes in their specialty mix, adding new cases, or deleting cases that are no longer going to be winners, this would be helpful," Mack says.

In addition, track the number of staff hours for those cases and cash collections. You should also perform a case cost analysis.

If you're faced with low volume, reach out to the schedulers in the physicians' offices to encourage scheduling more cases at your ASC. Work to bring in new physicians or speak with current physicians about adding new types of cases.

If adding cases is not an immediate option, consider making changes to staffing hours. Discuss this idea with your clinical managers. If possible,

Patients notified of risk after doctor misuses multiple-dose vials

State health officials in Nassau County, New York, notified 628 patients in November 2007 that they should be tested for hepatitis and HIV. The testing was advised because they were treated by an anesthesiologist who used single syringes to draw from multiple-dose vials in a pain clinic and orthopedist's office, the *New York Times* reported Nov 16. The story was also reported by *Newsday*.

Authorities said at least 1 person was infected with hepatitis as a result of the faulty practices. After testing, 12 more of his patients were found to be infected with hepatitis, but it was not clear whether the infections are related to his practices.

Health officials were strongly criticized for taking almost 3 years to notify the patients, who were treated between 2000 and 2005. Patients who received epidurals in the weeks surrounding the 1 infection were notified earlier. Officials acknowledged the delay but said they took time to make sure they were notifying only those exposed.

The practice of using the same syringe to draw from multi-use vials is contrary to the Centers for Disease Control and Prevention (CDC) Infection Control and Safe Injection Practices.

CDC recommendations

CDC recommendations state in part:

- Use a sterile, single-use disposable needle and syringe for each injection.
- Use single-dose medication vials, prefilled syringes, and ampules when possible. Do not administer medications from single-dose vials to multiple patients or combine leftover contents for later use.
- If multiple-dose vials are used, restrict them to a centralized medication area or for single-patient use. Never re-enter a vial with a needle or syringe used on one patient if that vial will be used to withdraw medication for another patient. Store vials in accord with the manufacturer's recommendations, and discard if sterility is compromised. ❖

—www.nytimes.com
—www.cdc.gov/ncidod/diseases/
hepatitis/spotlights/ambulatory.htm

---

reduce staff on low-volume days. Also consider hiring part-time or per-diem staff to save on salaries and benefits.

Since you're using this dashboard to help ensure your ASC is efficiently adjusting to new specialties and case volume changes, use it to monitor reasons why your ASC might fail to send claims for these new cases out in a timely fashion.

"Billing needs to go out within 48 hours of date of service," Mack says. "If those bills aren't being dropped, what's the reason? Do you need to review business office processes? Do you need to have a partnership meeting to discuss timely dictation?"

Consider adding rows to track the number of claims on hold and the reasons why they are not going out, such as:

- delayed physician dictation
- lack of required patient information
- delayed transcription
- operative notes awaiting coding.

If your claims do not always go out in 2 days, work with staff and physicians to minimize these occurrences.

Share the data

Share the information and data you gather with anyone in your organization who can help make a difference, such as administrators, clinical managers, staff, and even physicians.

Post volume and collections data on whiteboards so everyone knows about the success or struggles of the center.

"You can actually put your goal for collections up there," Mack says. "I think that's a great motivator to have a goal in your business office."

Post tables and graphs on bulletin boards in your physicians' lounge, for example.

If the dashboards indicate the need for significant changes, create a PowerPoint presentation with relevant data from the dashboards to show to your ASC's physician partners. ❖

—Robert Kurtz

Robert Kurtz is a freelance writer in Odenton, Maryland.

Nominate OR Manager of Year

Each year at the Managing Today's OR Suite conference, a manager or director is named OR Manager of the Year.

This year's conference will be Oct 29 to 31 in Washington, DC.

The OR Manager of the Year will receive an expense-paid trip to the meeting, including airfare, hotel, meals, and registration. The honoree also receives a scholarship from Kimberly-Clark Health Care to attend the Georgetown University Healthcare Leadership Institute in Washington, DC, in the summer of 2009.

In recognizing an individual manager, the award honors all OR managers for their important roles. It is a way of celebrating nursing management in surgical services.

Readers of *OR Manager* are invited to nominate a manager for the award. Simply write a letter of about 300 words describing what makes the manager deserving of the award. Supporting letters may also be sent.

Send the entry to OR Manager, Inc, OR Manager of the Year Award, PO Box 5303, Santa Fe, NM 87502-5303. The deadline for entries is July 1.

Nominations are judged by the *OR Manager* advisory board. ❖

A conference brochure will be posted in March at www.ormanager.com

Staph infections endemic and spreading in hospitals

Methicillin-resistant *Staphylococcus aureus* (MRSA) and *Staph aureus* are now endemic in hospitals and should become a national priority for disease control, according to a study in the December *Emerging Infectious Diseases.* The study from the National Institutes of Health found hospitalizations related to MRSA doubled between 1999 and 2005. Hospitalizations for other staph infections rose 62%. The study also found "dramatic increases" in skin and soft tissue infections that are typically community associated. The researchers say community-associated MRSA is spreading more rapidly and possibly making its way into hospitals.

—*Klein E, Smith D L, Laxminarayan R.* Emerg Infect Dis. *2007. www.cdc.gov/EID.*

Four transplant patients contract HIV, HCV from donor

Four transplant recipients at 3 Chicago hospitals contracted HIV after receiving organs from a single donor. The donor was registered through the Gift of Hope Organ & Tissue Donor Network, Elmhurst, Illinois. The recipients also contracted hepatitis C from the organs.

Health officials say this is the first report of the 2 viruses being spread simultaneously by a transplanted organ, according to the Nov 14 *New York Times.* Gift of Hope stated it had performed the standard tests according to guidelines, but the donor was likely in a window period. Officials say this may lead to changes in testing methods.

—*www.nytimes.com*

Survey: Disconnect between physicians' standards, actions

In a survey of 1,662 physicians, 96% agreed they should report impaired or incompetent colleagues, but 45% who encountered such colleagues had not reported them. Also, a majority said they would refer patients to an imaging facility in which they had a financial interest, but only 24% would inform patients of their financial tie.

More than a third said they would order an unneeded MRI if it were requested by a patient with low-back pain, though most said they do not want to waste scarce health care resources. The survey is reported in the Dec 4 *Annals of Internal Medicine.*

—*Campbell E G, Regan S, Gruen R L.* Ann Intern Med. *2007;147:809-810.*

The disappearing general surgeon

The number of general surgeons has dropped. The shortage could limit access to surgery and threaten small and rural hospitals, whose margins depend on general surgery cases, Josef Fischer, MD, writes in a commentary in the Nov 14 *JAMA.*

Only 1,000 general surgeons are being trained each year, and only about 300 to 400 completing residencies will choose general surgery. The others will specialize. Reasons for the shortage include reimbursement and lifestyle issues, with fewer wanting to work the long hours general surgery entails.

—*Fischer J E.* JAMA. *2007;298:2191-2193. www.jama.com*

Medtronic investigated for illegal physician payments

Medtronic Inc is cooperating with federal officials investigating alleged payments the company made to physicians for purchasing its cardiac stents and cardiac therapy devices, according to the Dec 5 *Wall Street Journal.* Medtronic also has been asked by the Justice Department to send information it provided to the Securities and Exchange Commission about payments made to foreign physicians in possible violation of the US Foreign Corrupt Practices Act, which is meant to stop bribes to foreign officials. In addition, the US attorney's office for the Eastern District of Pennsylvania asked Medtronic to provide documents on its relationship with a specific customer (the customer was not identified).

—*www.wsj.com (subscription required)*

Hospital quality, safety improved, Joint Commission reports

Accredited hospitals showed improvement in quality and safety in 2007 for patients with heart attacks and failure, pneumonia, and surgical conditions, the Joint Commission reports. Gaps in performance remain, however. For the 881 hospitals reporting data, the overall average was 86.7% for providing on-time antibiotics.

Compliance with the time-out before surgery fell from 91% in 2004 to 74% in 2006, but the Joint Commission thinks that's because surveyors are now looking not only at the OR but also at endoscopy suites, cath labs, and bedside procedures. ❖

—*www.jointcommissionreport.org*

Periodicals