Project teams put research into practice and cut infection rates

How do you weave evidence from the literature into practice to help prevent surgical infection?

A large body of evidence shows on-time delivery of properly selected antibiotics reduces surgical infection. Studies have been available for 30 years showing shaving the surgical site is unnecessary and even harmful. Yet many organizations have struggled to implement practices in line with the evidence.

Now a large national project is helping organizations change practice. Many are seeing their infection rates drop, in some cases dramatically. More than 50 hospitals participated in the National Surgical Infection Prevention (SIP) Collaborative that began in March 2002 sponsored by the Centers for Medicare and Medicaid Services (CMS).

The focus was on improving use of prophylactic antibiotics, though most also worked on other strategies, such as eliminating preoperative shaves and maintaining patients’ normal body temperatures, oxygen levels, and blood glucose levels.

“We’ve seen significant reductions in surgical site infection rates by a large number of the participating hospitals,” says Rosa Johnson, ARNP, MN, CPHQ, director of the national collaborative. She is on the staff of Qualis Health, a Seattle-based nonprofit that contracts...
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Improving process for prophylactic antibiotics
How organizations have fine-tuned a key process for preventing surgical site infections.

Spinal implant cost management
Learn how one hospital corralled its cost in this expensive specialty.

Sleep apnea
Advice for keeping patients safe who have obstructive sleep apnea.

Or Manager
The monthly publication for OR decision makers

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Editorial

Change is difficult, particularly for practices that have worn a rut in daily routines—shaving patients preoperatively and inconsistent delivery of prophylactic antibiotics, to name only two.

Even when there is strong evidence, old habits are hard to budge.

Changing practice is an age-old problem. A new book about Ignac Semmelweis makes me realize how far we’ve come. Semmelweis made a key discovery in the 1800s about the importance of handwashing.

His story is colorfully told in The Doctor’s Plague, by Sherwin B. Nuland, MD, a professor of surgery at Yale.

In Semmelweis’s day, it was common for women to die of a putrid disease—puerperal fever—after childbirth, particularly if they gave birth in a hospital and were attended by physicians or medical students.

There many theories about this—that the disease originated from a backup of lochia, clotted milk from the breast that had gone astray (really pus), or a vague “miasma.”

Semmelweis took an interest in the disease when he became an assistant to an old-guard doctor in the obstetrical ward of a hospital in Vienna, Austria. He would hear the bells ringing at night of the priests who came to give last rites to the dying women.

A series of observations led him to conclude the disease originated from “cadaver particles” (they didn’t know about bacteria then). The “particles” were transmitted by the hands of physicians and students who—shocking thought it seems now—would go right from the autopsy room to the obstetrical ward and do internal exams on laboring women without washing their hands. He started ordering every medical attendant to wash his hands in a chloride solution before touching the women. Right away, the death rate fell.

You would think the discovery would have been embraced immediately—not so.

Semmelweis’s old-guard boss refused to buy it, and he fought the medical establishment for years. But Semmelweis was also his own worst enemy. He failed to conduct a well-designed experiment to confirm his observations, and he took years to write up his discoveries. He eventually died uncelebrated in a mental institution where he had been confined for erratic behavior, probably, Dr Nuland believes, from early-onset dementia.

Making a difference
Those who have tried to change practices can probably relate to Semmelweis’s frustration. That is why it has been refreshing to hear about new initiatives that are making a difference.

Last month, we reported on research from Boston University that ties emergency department overcrowding to variabilities in the elective surgical schedule. We were excited to hear about facilities that are using the findings to make changes in how they schedule cases.

Last month’s issue told about Kaiser Permanente’s patient safety briefings, which borrow from aviation to create a cohesive team in the OR before each procedure. Patient outcomes improved, and nurse turnover went down.

This month, we begin a series about the National Surgical Infection Prevention initiative sponsored by the Centers for Medicare and Medicaid Services. The project gives teams the tools and support they need to make long-needed changes in practices that improve outcomes for patients, such as banning razors, making sure the right antibiotic is delivered at the right time, and controlling blood glucose. Some participants have seen surgical site infection rates fall significantly.

These projects are making strides. That may be because, unlike in Semmelweis’s day, these projects have finally achieved the critical mass of research evidence, institutional support, physician and nurse leadership, and public pressure to carry change forward. ❖

—Pat Patterson
Please see the ad for
ADVANCED STERILIZATION PRODUCTS
in the *OR Manager* print version.
Two sales representatives in Orange County, Calif, were arrested Nov 7 on charges that they fraudulently caused their employer, DePuy Acromed, Inc, to bill Southern California hospitals for about $3.5 million in spinal implant products that were never used during surgery.

Jason A. Koenig, 33, and Mark A. Crane, 45, both of Huntington Beach, Calif, were indicted by a federal grand jury on Nov 5, according to the U S Attorney for the Central District of California.

According to the indictment, Koenig and Crane were sales reps for the company from about February 2000 to about October 2002, covering a territory with about 15 hospitals in Orange and Los Angeles Counties. The two allegedly falsified lists of spinal implant products used during surgery, inflating the number of items used by three or four times and including some products that were never used.

"Basically, it happens because the sales reps attend surgery. They see what gets implanted and tell the company what to bill," said Jeannie M. Joseph, assistant U S attorney. "In this case, they wrote up more implants than were actually used." She noted that circulating nurses often rely on sales reps to record what is implanted. She said the two sales reps in this case allegedly upped the number gradually so the hospitals didn't notice the discrepancies at first.

The investigation into Koenig's and Crane's activities began when one hospital "noticed an extremely high bill for spinal surgery," the U S Attorney's office reported. Another hospital also noticed its spinal surgery costs were way over budget, except for one month when Koenig was on vacation. The hospitals then compared "hundreds of operative reports and patient x-rays against the bills submitted by the two sales reps." They found that only the bills submitted by Koenig and Crane included products that were not used during surgery.

Salesman of the Year

Koenig was named Salesman of the Year for DePuy Acromed in 2001, receiving close to $700,000 in commissions, the indictment said. Crane was the second highest billing salesman for spinal implant products that year, with commissions of about $500,000.

The U S Attorney says DePuy Acromed, Inc, a unit of Johnson & Johnson recently renamed DePuy Spine, does not appear to have known about the activities of its two employees, and the company was not a target of the investigation.

A spokesman for J & J said, "These two people concealed their activities from the company. Fortunately, none of the alleged conduct affected patients." He added that the company is actively cooperating in the probe and is considering its own legal options against the former employees.

Koenig and Crane were arraigned on Nov 17, and trials were scheduled for Dec 30.

Koenig was charged with 20 counts of mail fraud and Crane with 18 counts of mail fraud. They were charged with mail fraud because the allegedly fraudulent invoices were sent through the mail. Each count carries a maximum sentence of 20 years in federal prison. Investigations were carried out by the U S Postal Service and the FBI.
FDA urges reports on stapler incidents

The Food and Drug Administration (FDA) is asking physicians and nurses who have had adverse events with surgical staplers to report them to the manufacturer and to the FDA’s MedWatch program. The FDA has identified 112 deaths and 2,180 injuries related to surgical staplers reported to its database from 1991 to 2001. More than 17,000 malfunctions also have been reported.

Several thousand other reports of malfunctions will be added once analysis of another database is completed, notes FDA epidemiologist, S. Lori Brown, PhD.

The FDA has had a committee working on the stapler issue since 2001, but its work became public in the Boston Globe Nov 8. The Globe reported on a patient who died after laparoscopic bariatric surgery at Brigham & Women’s Hospital in Boston. The hospital started an internal review and suspended all laparoscopic gastric bypass procedures until the investigation is completed. Physicians were quoted as saying a stapler malfunctioned during the procedure. The hospital said it was still investigating the cause of death and probably would not be making further statements.

Use influence with manufacturers

Though causes of stapler incidents are hard to determine from the FDA reports, Brown says the agency believes a combination of factors is involved—human error, device design, and mistakes or failures in manufacturing.

The majority of the deaths were associated with gastrointestinal sites (65%), followed by pulmonary (19%) and cardiac or circulatory sites (5%).

The FDA’s analysis is under internal review, with plans to publish it in a medical journal. The FDA also plans to set up a web site where it will post the data.

“We’re hoping to make physicians aware that if they have a problem, they are not alone, and this is an issue they should be talking about,” says Brown.

She said it would be “impossible” for the FDA to say it would take a widely used type of device like staplers off the market. Rather, the agency wants to use strategies like the web site and MedWatch reports to make clinicians aware of the issues. The hope is that they, in turn, will use their influence with manufacturers.

“The reason we have practitioners report to manufacturers is to make [companies] aware of issues and give them feedback about their devices,” Brown says. “Practitioners have tremendous influence on manufacturers. If they band together and bring up issues, often they will be able to get results.”

Know signs stapler could fail

ECRI, a nonprofit health care technology assessment organization, has looked at a lot of stapler incidents in hospitals, notes Mark Bruley, vice president for accident and forensic investigation. In some cases, staplers failed, and in others, there were user errors.

He urged OR staff to read the instruction booklet that comes with each stapler so they can be aware if a particular stapler is deviating from normal performance.

Staplers that are about to fail often give off tell-tale signs, described in ECRI’s journal, Health Devices (September-October 2001; 30: 370-371):

• Difficult firing. Although the stapler jaws close easily around the tissue, the stapler handles require more force than usual to squeeze. If this occurs, do not reuse the device. Continue the procedure with another unit.

• Unusual sound. A clip applier makes a strange clicking sound when firing, suggesting the inner mechanisms aren’t working properly. Test fire the device outside the operative field to see if the sound repeats. If it does, use another unit to finish the procedure.

• Failure to cut. Although the liner cutter is fired and the staples form properly, the cutter blade won’t advance. Do not reload this unit and fire again. Instead, use another unit to finish the procedure.

Staplers also can fail without warning, so the staff should know how to resolve the situation quickly and carefully, the article adds. An example is a stapler that becomes locked around tissue.

Judging tissue thickness

“Probably the biggest issue is that surgeons have to appropriately judge the thickness of the tissue to be stapled,” Bruley says. If the staple line doesn’t form, that could be the reason. Only the surgeon can judge the proper staple length, so surgeons need a full range of staples readily available.

FDA urges reports on stapler incidents

The new staple-line reinforcement material being used in bariatric surgery, such as Seamguard from W. L. Gore, increases the thickness of the area to be stapled. Seamguard is a biosorbable membrane that is loaded onto the stapler jaws and applied during stapling. Seamguard instructions say the membrane increases the tissue thickness by about 0.5 mm, and staple size should be selected accordingly.

After the Brigham & Women’s incident, Tyco International, whose U S Surgical unit makes the Endo GIA stapler used in the case, sent a letter to its customers saying the W. L. Gore Seamguard had been applied in that case. The Tyco letter said, that “based on the limited information available, if there was a staple line failure, it occurred where 3.5 mm staples were fired over the Seamguard material.”

W. L. Gore, in a letter to OR Manager, said it has received no direct information on the case. It said Seamguard has been used safely on over 200,000 procedures since 1996. The company reminded health care professionals to review the Seamguard instructions for use. Information is available at www.goremedical.com or by calling 800/528-8763.”

For information on how to report MedWatch, visit www.fda.gov/medwatch

Reported device problems

Under the law, “user facilities,” such as hospitals or surgery centers, must report:

• device-related deaths to the FDA and the manufacturer
• device-related serious injuries to the manufacturer (or the FDA if the manufacturer is not known).

A voluntary report can be submitted to MedWatch by:

• completing form 3500 at www.fda.gov/medwatch
• phoning 800/FDA-1088
• mailing or faxing a report by downloading form 3500 and faxing it to 800/FDA-0178 or mailing it to the address on the form.

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For information on how to report MedWatch, visit www.fda.gov/medwatch
Who should mark the surgical site?

Who should mark the surgical site was one of the big questions raised at a wrong site surgery conference Dec 2 in Chicago sponsored by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO).

The conference focused on how to implement JCAHO’s universal protocol for preventing wrong surgery, which will be surveyed for accreditation purposes starting July 1. The protocol, which applies to all JCAHO-accredited hospitals, surgery centers, and office-based surgery facilities, outlines principles and required steps for verifying the correct patient, surgical site, and procedure.

“If you’re not in compliance with the universal protocol, ultimately you will not be accredited,” JCAHO President Dennis O’Leary warned. More than 40 associations have endorsed the protocol, developed through a consensus process after a national summit last summer. The protocol was approved by the JCAHO Board of Commissioners and is posted at www.jcaho.org.

JCAHO’s data indicates there is work to do. In random unannounced surveys of hospitals in 2003, the commission found 36% were not complying with surgical site marking (chart). Compliance on regular surveys was better.

At the conference, nurses and physicians asked how to interpret some parts of the protocol and how to get everyone, particularly physicians, to sign on.

Preferred approach

Several in the audience asked JCAHO to clarify who should mark the site.

The universal protocol states: “The person performing the procedure should do the site marking.”

In the protocol, the word “should” means there is latitude, while the word “must” means a requirement for accreditation, explained Richard Croteau, MD, JCAHO’s executive director for strategic initiatives.

The word “should” was chosen for this statement because processes vary by organization, and “we decided to allow for some degree of latitude,” he said, noting this was the consensus reached at the summit.

Nurses are leery that the flexibility will make it easier for some physicians to dodge site marking.

“Our position is that the preferred approach is that the person performing the procedure should mark the site,” Dr Croteau elaborated in an interview with OR Manager. JCAHO is trying to be sensitive to the fact that organizations have different processes, which can be complex, and “that may make it more reasonable to have someone other than the person performing the procedure mark the site,” he noted. But if that responsibility is delegated, “that must in no way compromise the safety of the patient or introduce any additional risk.”

He said JCAHO would offer additional interpretation of this statement in answers to frequently asked questions (FAQs) on its web site.

“Could the preoperative nurse mark the site?” someone asked at the conference. That option needs to be evaluated along with others before JCAHO gives a written response, Dr Croteau responded. He invited organizations that believe they have an equally safe alternative to the surgeon marking the site to send in a description of their process to be evaluated. Descriptions can be e-mailed to him at rcroteau@jcaho.org.

“We are dead serious”

Dr Croteau minced no words about JCAHO’s expectations for physicians in carrying out the universal protocol.

“We approach this as an organizational requirement,” he said. “To implement this protocol is going to take an organizational initiative. We have been very clear that this is a team activity. This is patient safety. We are going to enforce this. We are dead serious about it.”

Some organizations have instituted disciplinary policies to make it clear they mean business.

In Veterans Affairs facilities, reluctant physicians can have their privileges restricted. Not adhering to the VA’s site verification policy is “considered an intentional unsafe act,” the VA’s national patient safety director, James Bagian, MD, PE, said at the conference.

The VA has a national policy to ensure correct surgery. (The policy and a poster illustrating the steps are at www.patientsafety.gov. See also the February 2003 OR Manager, pp 14-15.)

At the Kaiser Permanente Medical Center in San Francisco, the OR Committee has a formal policy to encourage a few physicians who still did not comply with surgical site verification after an extensive educational effort. The policy has three steps:

1. After the first instance, the OR team receives a verbal warning and counseling.
2. The OR team receives a written warning.
3. All members of the OR team are suspended.

If a patient arrives in the OR without the site marked, a call is made to a hospital administrator or the chief of surgery, said the hospital’s director of hospital operations and chief nurse executive, Linda Groah, RN, MSN, CNOR, CNAAN, FAAN. The surgeon is called and asked to come to the OR and mark the site. If the surgeon refuses, the policy steps are initiated. In the 2 months the policy had been in effect, so far it had not had to be used, Groah said.

Hospital noncompliance with site verification

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<tr>
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<th>Regular surveys</th>
<th>Unannounced surveys</th>
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<tbody>
<tr>
<td>Timeout before surgery</td>
<td>8.7%</td>
<td>23.1%</td>
</tr>
<tr>
<td>Preoperative verification</td>
<td>1.6%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Surgical site marking</td>
<td>7.1%</td>
<td>35.9%</td>
</tr>
</tbody>
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Source: JCAHO. Surveys conducted from 1/1/03 through 9/30/03.
Fine-tuning surgical site verification

Steps one organization is taking to improve its site verification process.

After a patient is ready for surgery at Children’s Hospital of Pittsburgh, the nursing staff attaches a colored band to the child’s wrist. The colored band is placed only after all preoperative criteria are met.

The color of the band matches the OR to which the child will be taken. The ORs’ door frames are painted different colors; for example, OR 1 is red. The colored band is in addition to the patient’s identification band.

The band signifies that all steps required to prepare the patient for surgery have been completed: the patient’s identity has been checked, including name and birth date; history and physical are completed and on the chart; surgical and anesthesia consents are completed and on the chart; surgical site marking is completed; and all questions from the family have been answered.

Except for emergencies, all patients must have a colored band in place before being taken to the OR or procedure room.

“This is one more check for patient safety,” says Diane Hupp, RN, MSN, director of perioperative services.

In a visit by the Joint Commission on Accreditation of Healthcare Organizations in December, surveyors commended the colored band idea and supported the hospital’s verification process, Hupp said.

A site-marking matrix

The OR record has a matrix for documenting surgical site verification. The matrix allows for as many as three scheduled procedures and documents the oral site identification, consent verification, and site marking (illustration).

The same matrix was made into 4 x 6 inch stickers to place on charts for all procedures outside the OR, including GI endoscopy, the cardiac cath lab, and dental and interventional radiology procedures.

Surgeon marks site

The site marking is performed by the surgeon or a person who will be performing or participating in the surgery.

The family must be present and in agreement when the site is marked. If a responsible adult is not present and delay is not in the child’s best interest, the surgical site and side are confirmed by phone and witnessed by an RN. The surgeon notes in the chart that the adult was not available and the need to proceed with the procedure.

Two time-outs

Two time-outs are taken after the patient is in the operating room, and both are documented on the OR record:

1. Before induction or sedation begins, the nurse and anesthesiologist (or person giving sedation) orally verify and agree on the patient’s identity and procedure. If the patient has come through the holding area, the nurse checks to see that the colored wristband matches the OR color.

2. Before the invasive procedure begins, a minimum of two members of the team, at least one of whom is the surgeon or proceduralist, conducts a second time-out to orally confirm the patient’s name and surgical procedure, including site and side if applicable. The procedure does not begin until this step has been taken.

Monitoring results

To ensure the side-site verification policy is being followed, Hupp and her team conduct chart audits, with 100% compliance expected. In addition, random checks are conducted by the surgeon-in-chief, the OR nurse manager, and Hupp.

“Ensuring 100% compliance of site marking and documentation is a challenge for any OR leadership team,” says Hupp. “We have met our goal this past year. We credit our committed OR manager, our OR staff, and our surgeon-in-chief who accept no deviations from the policy and believe patient safety always comes first.”
Marking the site for spinal surgery

What is required to verify the site for a spinal surgery procedure?

Among issues are how to mark the skin, who should do the marking, and how to verify the site in the OR.

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) addresses spinal surgery in its new universal protocol for preventing wrong surgery, which takes effect July 1. The universal protocol states that procedures will be marked that involve:

- right/left distinction
- multiple structures (eg, fingers and toes)
- multiple levels (as in spinal procedures).

The site is to be marked “such that the mark will be visible after the patient has been prepped and draped.”

For spinal cases, the protocol states: “In addition to preoperative skin marking of the general spinal region, special intraoperative radiographic techniques are used for marking the exact vertebral level.”

Two-stage approach

JCAHO expects a two-stage approach for spinal cases, Richard Croteau, MD, JCAHO’s executive director for strategic initiatives, told OR Manager.

First, preoperatively, JCAHO expects the skin to be marked in the general region of the spine where the surgery will take place.

That is a requirement because “we have [reports of] cases in which operations have been initiated at the wrong level. That clearly would have been prevented by preoperative marking,” he said. JCAHO prefers that the skin be marked by the person performing the procedure but allows some latitude (related article, p 7).

Second, after the patient is in the OR, there is a time-out to verify the site, including checking the skin marking. Then, typically, after the operation begins and the surgical site is opened, the surgeon places a radiopaque marker at the site, and a film is taken. This film is compared to the preoperative films to verify the site precisely.

“There are variations in exactly how that is done, and we are not going to prescribe that,” Dr Croteau said. “The purpose was to say that we recognize the preoperative skin marking is not going to localize the site precisely. You have to do something else to achieve that.”

Not all are marking skin

Not all ORs currently mark the skin for spinal surgery, an informal poll by OR Manager found. A total of 13 hospitals participated in the poll conducted by e-mail and phone calls. Of the 13, 7 were marking the skin before the procedure, and 6 were not. After the patient is taken to the OR:

- All said they were doing a time-out to verify the patient, site, and levels, including a review of preoperative documentation and diagnostic films.
- Prior to the incision, 3 were placing a marker, such as a needle, and taking a film to verify the site.
- After the incision, all were taking an intraoperative film with the site marked by a needle or instrument.

One hospital with a large spine program performing 3,200 spinal cases a year described a process similar to what JCAHO recommends:

1. In the preoperative area, the region of the spine is marked by the nurse with the levels identified in the informed consent. The site is marked for right or left or both if bilateral.
2. In a two-step process in the OR:
   a. Before the incision, there is a time-out to confirm the correct patient, the site and site marking, and the procedure to be done.
   b. After the incision, the surgeon must mark the level with a needle or instrument. The level is confirmed by x-ray, read by the surgeon. This is an institutional policy.

“Surgeon should sign”

The American Academy of Orthopaedic Surgeons (AAOS) advocates that surgeons, consulting with the patient if possible, mark their initials on the operative site. For spinal cases, AAOS also recommends that the surgeon take an intraoperative x-ray using markers that do not move to confirm the site. (The statement is at www.aaos.org. Enter search term “wrong site surgery.”)

AAOS takes the position that the surgeon should be the one to sign the site preoperatively after talking with the patient before the patient is sedated.

“We are strong in saying it should be the surgeon who marks,” Dr Herndon says.

A recent study shows relying too much on the patient to mark the site without the surgeon may be risky. The study of 100 patients having foot and ankle surgery found 37 did not comply with specific instructions to mark their site (DiGiovanni C W, Kang L, Manual J. J Bone Joint Surg Am. May 2003; 85-A:815-819).

Dr Herndon said x-rays to verify the site are important, particularly for new minimally invasive procedures, because the surgeon does not have enough exposure of the spine to count the levels to verify the one to be operated on.

“If I were a hospital CEO, my protocol would be to say that if the surgeon can see anatomical markers to verify the site, that’s OK. If not, I would expect an x-ray to be taken,” he said.

The North American Spine Society advocates that surgeons involve the patient in confirming the site, either through the informed consent or by marking. The society has a checklist for surgeons to use at www.spine.org. The site also has anatomical diagrams of the spine surgeons can use in the informed consent process.

“The surgeon can mark the level on the diagram. We suggest giving patients the diagram to take to surgery with them. The surgeon can also duplicate it and put it in the packet that goes from the office to the hospital,” commented David Wong, MD, the society’s president.
Infection control

Continued from page 1

with CMS for quality improvement. She could not share specifics because the results are being submitted for publication.

Among results made public are those of Mercy Health Center in Oklahoma City, Okla, which reduced surgical infections by 78% for cardiac bypass, knee and hip replacements, colon surgery, and hysterectomies. St Joseph Regional Medical Center in Milwaukee, Wis, lowered infection rates for cesarean sections and colorectal surgery by 100% and cardiac surgery infections by 71%. Gwinnett Hospital System in Lawrenceville, Ga, reached its goals of 100% on-time antibiotic administration plus having 100% of patients with normal body temperatures and proper oxygenation during surgery.

National participants now are working at the state level to share findings and help others improve. In a series of articles, OR Manager will report on successful change strategies participants have used. This issue focuses on eliminating the preoperative shave. (See p 11.)

What has made a difference?

Why has this project made a difference when changing practice has been so difficult?

One reason is a major push from CMS, which made preventing surgical site infection a priority. When CMS, through its quality improvement organizations (QIOs), invited hospitals to participate, invitations went to CEOs. That meant that if the hospital decided to join, the direction—and allocation of resources—came from the top.

Another reason is the support participants receive through the collaborative model. In a collaborative, teams from 20 or more organizations work together for a period of months to improve in a specific area. Teams attend learning sessions to learn about tools for rapid-cycle improvement. They also have access to national experts and learn from each other. The collaborative model was developed by the nonprofit Institute for Healthcare Improvement (IHI), Boston.

“The nature of a collaborative is that everybody is presented with the evidence, so everybody is on the same page,” Johnson explains. “They can go back to their hospitals, try rapid-cycle improvements, and find out if they work.”

Friendly competition emerges. “People learn that if others in the collaborative can do it, then they can, too. They start succeeding, and they get inspired,” Johnson adds. They are held accountable because their organization has made a commitment to the project, and they report on their progress to the rest of the collaborative.

At least three team members from each organization are expected to attend learning sessions:

• a system leader, such as a vice president, who has enough authority to institute change and overcome barriers
• a clinical leader, such as a respected surgeon or anesthesiologist or both, who has a good working relationship with colleagues and is committed to driving change
• a day-to-day leader who will shepherd the project, understands the details of the process, and has a good relationship with the clinical leader; examples are a perioperative or infection control nurse.

Once one team in a hospital has a success, the momentum builds.

“Often, other surgeons will find out what is going on and say, ‘Why can’t we be involved in this, too?’” Johnson notes. ❖

For information about the National Surgical Infection Prevention Collaborative, visit www.surgicalinfectionprevention.org

Contaminated knee graft causes GAS infection

A 17-year-old Colorado boy became severely ill in September after contracting a group A streptococcus (GAS) infection from a contaminated knee allograft, the Centers for Disease Control and Prevention (CDC) reports. The boy required a 17-day hospital stay with intensive care and was still recovering.

The CDC says the case highlights the need for better tissue processing standards.

The CDC would not identify the tissue supplier, but the New York Times identified it as Cryolife. Grafts from the same donor were implanted in five other patients, but as of Dec 1, complications had not been detected in these patients. All of the remaining grafts were placed on hold or recalled.

The tissue donor had had a cervical spinal fusion 3 weeks before his death. An autopsy found he died of toxic levels of drugs.

The tissue recovery organization had found GAS in cultures before sending the tissue to two processors. The first processor, which supplied the graft, processed the allografts by aseptic technique and an antimicrobial solution but did not sterilize the tissue, the CDC reports. Sterilization typically isn’t used for soft tissue grafts because it can alter the graft function. All cultures after processing were reported negative for GAS, and the grafts were distributed. The second tissue processor held the tissue and did not distribute it.

An investigation found an uncommon strain of GAS in both the donor’s blood and unprocessed tissues.

CDC’s advice

The CDC recommended that tissue processors sterilize or discard tissue with GAS or other pathogenic, highly virulent organisms. This advice shouldn’t limit tissue availability because GAS is uncommon, the CDC said.

The American Association of Tissue Banks, a voluntary organization, has proposed sterilizing or discarding tissue when certain organisms, such as GAS, are detected. Tissue processors should also validate methods used to obtain culture specimens after tissue is processed.

The CDC asked clinicians to be aware of possible infections with allografts and report infections to the tissue processor and local health department. ❖

Changing practice for preop hair removal

For decades, there has been strong evidence that shaving the surgical site is unnecessary and even harmful, but changing practice has been difficult.

Now some organizations have found ways to eliminate the preoperative shave as part of the National Surgical Infection Prevention (SIP) Collaborative sponsored by the Centers for Medicare and Medicaid Services (CMS).

Key concepts for changing practice introduced during the collaborative were to:
- remove all razors from the operating room
- perform hair removal when necessary with clippers right before surgery
- establish a protocol for when and how to remove hair in affected areas.

Razor roundup

Mercy Health Center in Oklahoma City, Okla., chose hair removal to kick off its surgical site infection quality improvement (QI) process because “we wanted a big, visible success that would garner momentum for the process,” notes Ronda Pasley-Shaw, RN, CIC, manager of epidemiology and occupational health. Mercy, a 400-bed tertiary care center, performs about 1,000 procedures a month in the main OR and two surgery centers.

She and her team planned small steps that would make the change process safe for the staff.

“We wanted to make it easier for people to do the right thing,” she says.

Even before the first meeting, Pasley-Shaw had supply techs do an inventory and start a “razor roundup,” pulling back on the numbers of razors in stock.

To gain support, the team asked the staff to select the style of clippers they wanted. The staff also planned where the clippers would be kept in each room. “Clipper tenders” were assigned to keep the clippers where they belonged.

“One of the things you run into is the scarcity mentality,” explains Pasley-Shaw. “If you have 100 razors in every room and one set of clippers, it looks like you don’t have enough clippers to go around.” That encourages people to stash the clippers in their own special places. Then the next person can’t find them, fueling the perception of scarcity.

Once the clippers were stocked in the ORs, the next step was to make it less convenient for surgeons to get razors. Razors were gathered and moved onto supply carts in the halls. The staff were given a script of what to say when a surgeon asked for a razor: “I will be happy to get that for you. It is out on the supply cart. In the meantime, I have these clippers.”

Next, razors were moved a step further to the supply room. The staff kept using the script, now telling surgeons they would be glad to get a razor but would need to get it from the supply room.

“Nobody says ‘no’ at any time—it isn’t confrontational. It is letting people make safe changes,” Pasley-Shaw comments.

“The shot heard ‘round the OR”

To drive the change forward, the team recruited two respected surgeons. On a prearranged day, they asked the two surgeons to refuse to start their cases until clippers were used for their patients.

“It was the shot heard ‘round the OR,” Pasley-Shaw notes.

When these two surgeons calmly and quietly refused to take their patients back to the OR until clippers were used, the word traveled quickly. That helped quiet the voices of those who said clipper use would never work. From then on, when someone groused about the clippers, a staff member could say, “Oh, but Dr So and So wants to use them.”

Changing practice, one surgeon at a time

An easy-to-read summary of the research on hair removal posted by the scrub sinks helped Gwinnett Hospital System, Lawrenceville, Ga, to change its hair removal practices (illustration).

A multidisciplinary team of nurses from the OR, preop, and postanesthesia care plus an anesthesiologist planned how to implement the no-razor practice. Circulating nurses talked up the plan, and the director of inpatient surgical services discussed it at staff meetings, says Gwen Hudson, RN, BSN, the surgical systems project operations manager.

The project began with hysterectomies, performed by two surgeons, and colon procedures, performed by one surgeon.

The team proposed that the clinical champion, surgeon Dave Schmidt, MD, use the clippers for one day on his patients. He liked the clippers and was interested in the statistics on infection risks with razors. He shared the information with his partners, and they also began using clippers.

After just 2 months, all of the surgeons were using clippers on all procedures in all four of Gwinnett’s surgical facilities, two inpatient and two outpatient. The Gwinnett system performs about 25,000 cases a year. Gwinnett partnered with 3M, which provides the clippers, with Gwinnett buying the reusable heads.

“But we’ve always done it this way”

Memorial Hospital in Colorado Springs, Colo, has seen clipper use jump from 25% to 96% since March 2003, says Jill Garrett, RN, perioperative division care manager.

A major driver of the change was the hospital’s participation in Colorado’s CMS SIP project. Earlier efforts had been unsuccessful, but this time the change went smoothly. Garret attributes success to support from the administration, the surgeons, and the perioperative nursing staff.

The key, she says, was enlisting staff support and providing education. Both staff and surgeons were interested in the research that supported clipping.

The perioperative division obtained a grant from AstraZeneca that allowed them to provide a series of 1-hour in-ser-
During the month of July 2002, the change concept we will be testing is avoiding shaving of the surgical site. Below is a summary of evidence/research that supports this process:

**CDC GUIDELINE FOR PREVENTION OF SURGICAL SITE INFECTION, 1999**

Published in April 1999, this two-part guideline presents the Centers for Disease Control and Prevention (CDC)'s recommendations for the prevention of surgical site infections (SSI). The development of this document included 497 references, the work of five authors, and an infection control practice advisory committee from the CDC. Part I, Surgical Site Infection: An Overview, describes the epidemiology, definitions, microbiology, pathogenesis, and surveillance of surgical site infections. Part II, Recommendations for Prevention of Surgical Site Infection, represents the consensus of the Healthcare Infection Control Practices Advisory Committee regarding strategies for the prevention of SSIs.

**Preoperative hair removal recommendations** (Category IA: Strongly recommended for implementation and supported by well-designed experimental, clinical, or epidemiological studies) are as follows:

- Do not remove hair preoperatively unless the hair at or around the incision will interfere with the operation.
- If hair is removed, remove immediately before the operation, preferably with electric clippers.

**INFLUENCE OF HAIR REMOVAL METHODS ON WOUND INFECTIONS**

Published by J. Wesley Alexander, in the Archives of Surgery, Vol 118, March 1983. The influence of preoperative shaving versus clipping on wound infection rate was studied. Patients were prospectively randomized to be either shaved or clipped the night before or the morning of operation. The AM clipper method was associated with significantly fewer infections than were the other methods, both at discharge and at 30-day follow-up. The greatest benefit was in the group with clean wounds. For each 1,000 patients treated, a savings of approximately $270,000 could be realized if the AM clipper method replaced shaving for preoperative hair removal.

![Influence of shaving on SSI](source)

<table>
<thead>
<tr>
<th>No prep</th>
<th>Depilatory</th>
<th>Shaved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>155</td>
<td>153</td>
</tr>
<tr>
<td>Infection Rate</td>
<td>0.6%</td>
<td>0.6%</td>
</tr>
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</table>

Published by R. Seropian, B. Reynolds, in the American Journal of Surgery, 1971: 121; 251-4. The influence of the method of hair removal, razor versus depilatory, on the risk of postoperative wound infection was studied in 406 cases. The infection rate was 5.6% after razor preparation, 0.6% after depilatory, and 0.6% after no preparation. These findings suggest that although depilatory preparation does not contribute to the risk of wound infection, the razor preparation has a definite adverse effect. Support is provided for the concept that bacterial liberation and growth after razor preparation injury are responsible for this adverse effect.

*Poster used by Gwinnett Hospital System in project to eliminate preoperative shaves.*
New infection control standards hold leaders accountable

The buck stops on administrators’ desks in new infection control standards from the Joint Commission on Accreditation of Healthcare Organizations (JCAHO).

The standards, effective Jan 1, 2005, apply to hospitals, ambulatory care organizations, and other health care facilities.

“The accountability is with the organization’s leaders,” said JCAHO President Dennis O’Leary, MD, at a national conference in November in Chicago. “There is no opportunity to diffuse responsibility.”

JCAHO plans to survey whether leaders provide adequate resources and training for infection control, he said.

The new standards consider infection control to be a patient safety initiative.

“Safety is a priority, even more important than the production schedule” [keeping patients moving through the system], added JCAHO Vice President Robert Wise, MD.

Asked how JCAHO planned to get this message across to administrators and CFOs, he answered, “When we do a survey, we will look at the different levels of the organization to see that there is adequate support.”

One attendee asked, “If leaders are so important, why aren’t the standards in the Leadership chapter [of the accreditation manuals]?”

“In the initial rollout, we thought the standards should be directly linked to infection control,” Dr Wise responded.

Married to PI

The standards also are “now married to performance improvement,” Dr O’Leary added. Surveyors will be looking “for data, action plans, and results.”

JCAHO elected not to include a specific requirement for calculating the number of infection control staff.

“We wanted to stay away from ratios,” Dr Wise said. Instead, surveyors will look at staffing related to qualifications, the risk of services provided, the patient population, and the complexity of activities to be carried out.

Still in field testing are standards addressing the expanding role of infection control—preparing the organization to respond to epidemics such as SARS or bioterrorism attacks and limiting the emergence of antibiotic-resistant pathogens.

Some in the audience found the scope of the role daunting. “I have 18 years of experience and a master’s in microbiology, and I feel overwhelmed,” said one infection control professional.

Patient safety goal

Also on the agenda was JCAHO’s new National Patient Safety Goal No. 7 for preventing health care-associated infections (the new term for nosocomial infections). The goal requires organizations to comply with the Centers for Disease Control and Prevention’s hand-washing guidelines and to treat all cases of unanticipated death or major permanent loss of function associated with a health care-acquired infection as sentinel events. JCAHO has 33 such events in its database, up from 10 a year ago.

The sentinel event requirement isn’t really new because any unanticipated death or major loss of function is considered a sentinel event, JCAHO says. But not many organizations defined infection-related deaths that way.

Organizations have been struggling with when to report such an infection that results in a loss of function.

“We are not going to be particularly rigid,” said JCAHO’s Richard Croteau, MD. He implied it would be progress if JCAHO could just get information on unanticipated deaths where an infection was involved. Whether the infection was the actual cause of the death doesn’t really matter because any unanticipated death needs to be investigated as a sentinel event. The root cause analysis is a team effort, he added, and shouldn’t just be left up to the infection control professionals.

Though the standards won’t take effect until 2005, “We hope no one feels they can relax,” Dr O’Leary said. “Infection control has been the focus of random unannounced surveys in 2003 and will be again in 2004.”

Infection control

Continued from page 11

vice programs with continuing education units plus breakfast and lunch for day and evening personnel, which reached over 90 employees. Garrett reviewed information about mandatory use of clippers and asked for the staff’s input about the problems of razors. Most of the comments she heard were, “Clippers are never available,” and “The surgeons don’t want to wait for the staff to find clippers.”

Clipper heads weren’t being stocked appropriately, and clippers had a way of disappearing. After an audit in all of the rooms, the department negotiated with the vendor for new clippers for the 15 ORs where about 1,400 procedures are performed each month. Having clippers readily available solved delay problems.

“I wanted to stay away from ratios,” Dr O’Leary said. Instead, surveyors will look at staffing related to qualifications, the risk of services provided, the patient population, and the complexity of activities to be carried out.

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Oct 6 to 8
Hyatt Regency Chicago

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www.ormanager.com

2004 Managing Today’s OR Suite Conference

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OR efficiency

Continued from page 1

they have gone home or to which inpa-tient care unit.”

In actual practice, not a word is spoken.

Using a patient flow management system developed by St Paul-based NaviCare Systems, nurses and doctors in the OR can check on the location and status of any patient who has been registered and scheduled for surgery that day.

Surgeons in their offices also can use software over a secure Internet connection to check on the status of their patients.

“Our whole reason for buying the system was to improve communication, especially with families, and we feel we have done that,” says Ratajczak. “Now we are looking for ways to use time more efficiently.”

Reducing the number of telephone calls between staff members is one advantage to patient flow information systems like NaviCare’s OR Navigator. Knowing where patients are—at the touch of a mouse-pad or keystroke on a computer—can help speed the tasks of nurses, doctors, and support staff.

The thought behind patient tracking systems is that fewer delays can lead to tighter surgery schedules that in turn allow for greater volume and increased revenue.

At least that is what the patient tracking information technology companies say and some OR executives hope for. The jury is still out on many of these claims, however.

What is clear is that reports generated by patient tracking systems help OR staff members identify inefficient processes and such delays as first-case or last-case start times. Information on delays can assist nurses to decide if surgery schedules should be adjusted during the day.

Individuals—nurses, doctors and support staff—also can be tracked to determine how timely they are in performing their jobs. Those who routinely cause delays can be subjects of productivity meetings or even disciplinary actions.

Data doesn’t lie

“You can’t survive today without data,” says Doug Heavisides, OR administrative director at Dartmouth-Hitchcock Medical Center in Lebanon, NH.

Better communication, fewer phone calls

In a survey last year before a new OR patient tracking system was installed, surgery staff at Providence St Vincent Medical Center in Portland, Ore, spent an average of 11 phone calls per patient. Each call averaged 15 seconds. With 110 surgeries per day, the OR staff spent a total of 5 hours per day on the phone.

“We have almost eliminated phone calls with the new system,” says Deborah Tuke Bahlman, RN, regional surgical services information systems manager with Providence Health System, the Catholic hospital’s parent organization.

“We are able to do more surgeries because of the time it saves staff,” Bahlman says. “It is major efficiency from a financial standpoint. It pays for itself.”

The hospital developed its system last year with the help of two information system companies—Versus Technology, Traverse City, Mich, and Healthcare IT, Charlotte, NC. Versus Technology provided the passive tracking components, and Healthcare IT adapted its ED tracking technology to the OR, Bahlman says. Providence St Vincent has an annual ser-
OR efficiency

**Patient tracking system vendors**

**Healthcare IT**  
888/264-5852  
www.healthcareit.com

**NaviCare Systems Inc**  
877/628-4227  
www.navicare.com

**PeriOptimum**  
866/737-4671  
www.perioptimum.com

**Picis**  
781/557-3000  
www.picis.com

**Surgical Information Systems**  
800/866-0656  
www.orsoftware.com

**Versus Technology**  
231/946-5868  
www.versustech.com

We have attempted to provide a complete list and apologize if any vendor has been omitted.

Bob Schlotman, vice president of marketing for Surgical Information Systems in Alpharetta, Ga, says its client, 442-bed Ochsner Clinic Foundation Hospital in New Orleans, started using the company’s StatCom OR system in 2002.

More cases through the OR

“They are getting more cases through the OR and have significantly reduced the number of phone calls between staff and physicians,” Schlotman says.

By using NaviCare’s system and working with physicians, Fairview-University increased on-time first-case surgery starts to 80% in 2003 from 37% in early 2002, says Ratajczak. Using reports generated by OR Navigator, Ratajczak and other managers identified physicians who were not meeting the required 15-minute presurgical check-in time.

“We post on-time data in the doctors’ lounge and talk with them about compliance,” she says, adding there are policies for addressing consistent noncompliance. Reports also are run on nurses, technicians, and other surgery workers to identify areas for improvement.

Using reports that identify causes of delays, Ratajczak found a specific patient population was consistently late arriving to OR registration. OR managers discovered that one physician’s practice required patients to report to its office before going to the hospital.

“They were not telling patients to arrive early enough for OR registration,” Ratajczak says. “Patients were arriving 30 minutes before surgery time instead of 90 minutes.”

**Estimating costs**

While costs for systems vary depending on the size of hospital and the components requested, NaviCare estimates the initial software costs for a patient-tracking system for a 400-bed hospital with 15 ORs and a cardiovascular lab are about $200,000 to $300,000. Variable costs include the number of computers and keypads required. There also is an annual maintenance that usually includes software upgrades and telephone support.

“Return on investment is an important issue, but it is very hard to quantify,” Ratajczak says. “It is hard to say whether we have saved money on overtime or increased revenue because there are so many variables.”

Can all hospitals benefit?

OR departments should conduct process improvement projects to reduce staffing costs and improve surgical start times before they purchase patient-tracking systems, Dr Dexter says.

“The challenge is for hospitals to do a better job estimating when their last case finishes,” he notes. “You can also use the existing schedule more appropriately to reduce overtime.”

But hospitals with smaller OR departments with five rooms or less might not need computerized tracking systems, Dr Dexter says. Patient tracking systems are more useful for high-volume ORs or trauma centers where surgical times are unpredictable, he adds.

“These tools are exceedingly helpful to improve communication, but they would have minimal value for outpatient surgery centers,” Dexter says.

ORs that are performing relatively predictable procedures of 30 minutes or less, “might not need a system like this,” he says.

Heavisides adds: “Any hospital with more than five rooms and more than 15 surgeries per day could benefit from a tracking system.”

Adds Bahlman of Providence St Vincent, “With our 27 surgery rooms, I can’t imagine not having it.”

Like most ORs, she says Providence St Vincent previously used a centrally located “greaseboard” to track patient activity. This constantly changing schedule matched up surgeries, rooms, and job assignments.

But the federal privacy law, the Health Insurance Portability and Accountability Act (HIPAA), requires increased patient confidentiality. Replacing the highly visible greaseboard with a computer screen not only protects patient privacy but also improves accuracy, quality, and efficiency of the surgical process. Encrypted identifiers are substituted for patient names.

Virtual surgery unit

Now Providence St Vincent’s OR is displayed as a “virtual surgery unit” on 23-inch computer screens. Patients wear badges that emit infrared, or radiofrequency, signals—a feature not all systems offer. Through ceiling-mounted sensors, nurses, doctors, and visitors can locate patients using a desktop computer.

“With so many surgeries we needed to find a way to determine the location of a patient,” Bahlman says. “When a physician wants to locate a patient, he can see where the patient is anywhere in the process.”

Continued on page 18
Please see the ad for
BOVIE MEDICAL
in the OR Manager print version.
**JCAHO’s medical staff standards**

Several Medical Staff standards in the Comprehensive Accreditation Manual for Hospitals (CAMH) apply to physician privileging.

The functions and activities of an organized medical staff require medical staff bylaws, rules and regulations, and policy describing how the medical staff supports high-quality medical care of patients.

Similar requirements are found in the Leadership chapter for “licensed independent practitioners” (LIPs) who perform surgery and other procedures placing patients at risk. Requirements for LIPs performing surgery in free-standing ambulatory surgical centers are in the Leadership chapter of the Comprehensive Accreditation Manual for Ambulatory Care.

The following standards in the 2004 CAMH would apply, for example, to the chief of surgery. (For more detail on what is expected for the medical staff and department leaders such as the chief of surgery, see the 2004 CAMH and review the Elements of Performance, which will be used to measure the hospital’s performance.)

**MS.1.20:** Medical staff bylaws address self-governance and accountability to the governing body.

**MS.4.20:** There is a process for granting, renewing, or revising setting-specific clinical privileges.

**LD.2.20:** Each organizational program, service, site, or department has effective leadership.

Additional standards apply to the granting of clinical privileges and the processes required to review, recommend, grant, and appraise performance of all members of the medical staff in an ongoing set of processes at least on an every-2-year cycle.

**MS.1.40:** There is a medical staff executive committee.

**MS.3.10:** The organized medical staff has a leadership role in hospital performance improvement activities to improve quality of care, treatment, and services and patient safety.

**MS.4.20:** There is a process for granting, renewing, or revising setting-specific clinical privileges.

**MS.4.30:** An organized medical staff may use an expedited process for appointing to the medical staff and when granting privileges when criteria for that process are met.

**MS.4.40:** At the time of renewal of privileges, the organized medical staff evaluates individuals for their continued ability to provide quality care, treatment, and services for the privileges requested as defined in the medical staff bylaws.

or how OR attire is to be worn, if they notice something out of the ordinary, they might drill down into what your policy and procedures require related to what they see.

Of course, the infection control issues surrounding OR attire already could have been addressed by your organization’s infection control practitioner or committee. Surgical department policy also should address appropriate attire and where it is required. These policies and procedures are then systematically enforced throughout the organization.

Beginning in 2004, each accredited organization will be looking at its own performance against the standards. If problems or issues related to OR attire are noticed, you would be expected to define the scope of the problem and develop and implement an action plan to improve staff performance in this area. In other words, you will be expected to fix the problem yourself—before any surveyor ever gets a chance to see it.

**Q.** Does JCAHO have standards related to contracted perfusion services? Will this service, if contracted, be surveyed in the same way it would be if it were performed by in-house staff?

Continued on page 18
A. No, there are no standards specifically related to perfusion services. Yes, if contracted, the service would be surveyed the same as it would be for in-house staff.

Joint Commission standards focus on the processes and systems required to provide ever-improving patient care and services. Expectations of staff in providing care are the same regardless of how any individual or group of staff “got their job.” Some perfusionists are hospital employees, while others are in an allied health category or under the medical staff organization. Still others are under a contract or written agreement.

Expectations for all types of staff are the same—that they are qualified by education, training, and experience to do the job they’ve been hired or contracted to do. They must also maintain and improve their competence to do that job. And their performance must be evaluated on a regular basis.

Examples of mechanisms for evaluating performance include “membership rights and monitoring” under the Medical Staff credentialing and privileging processes; the traditional Human Resources process, or assignment of contracted personnel to someone knowledgeable to determine whether they are still competent or able to provide services in a high-quality manner. An example is the perfusionist who is a member of the operating surgeon’s team. The perfusionist most likely has been given privileges by the hospital to work on that team. His or her performance is evaluated as part of the process for initial granting of privileges and the ongoing review and granting of continuing privileges, a process that should take place at least every 2 years.

—Carole H. Patterson, MN, RN
Senior Consultant
Critical Management Solutions, Inc.

Critical Management Solutions is a private health care consulting company specializing in sentinel event management and error reduction. www.nomoreerrors.com

While Dartmouth-Hitchcock’s system does not have infrared patient tracking, Heavisides says such a system can be helpful.

“It is pure efficiency to have infrared, although it is costly,” he says. “A nurse doesn’t have to go to a computer screen to push a button; the patient entering a room triggers the data point. Infrared tells you where a patient is, but you have to physically input specific data like when the surgeon is making the incision and other notes you might want to make.”

Like most commercial systems, Dartmouth-Hitchcock’s system starts when patients are registered and ends when they go home or are transferred to a hospital bed.

“We also have a unique patient ID number that is given to the family so they can follow the process on a screen in the waiting area without having to ask someone,” he says.

Pagers can be programmed to summon staff to duty when patients enter specific, predetermined tracking points. For example, “When the circulating nurse documents in the system that a patient is rolled into the OR, the next tracking point is that the patient is ready for anesthesia, and the doctors can be summoned to the OR,” Heavisides says.

For the 20 main ORs on two floors, “The system helps us keep OR utilization at about 89%, which is very good,” he says.

With SmarTrac, Picis’s OR patient tracking system, a schedule of events with times, called pathways, is developed for each patient. If delays occur, the system can identify problems and alert the appropriate people, Smith says.

For example, if a patient is scheduled to enter the preoperative area at 8:30 am and does not show up, the patient’s name will flash in red, and the computer e-mails or pages staff, he says.

“If I do not have that system, I have to make a phone call to find out where the patient is,” Smith says. “Unfortunately, the delay may put you 30 minutes behind schedule before you get it sorted out.”

The quicker OR nurses know of delays, the faster they can make decisions on changing the surgery schedule, Smith says.

“Delays happen every day. People do not show up on time or cases take longer, and schedules are juggled. The question is, ‘How fast can you use the system to communicate to make changes?’”

Hospitalwide patient tracking

Smith predicts that up to 1,500 hospitals over the next 2 to 3 years will replace DOS-based systems with more up-to-date OR tracking systems that can be integrated with other departments and systems. “You need patient tracking, but you also need scheduling, billing, nursing documentation, anesthesia, and PACU systems,” he says.

Several companies offer tracking systems for other hospital departments. Surgical Information Systems, for example, offers systems for emergency, dietary, bed control, housekeeping, transportation, radiology, nursing, physicians, and waiting rooms, Schlotman says. NaviCare also offers emergency department and bed management systems.

“We got started in the OR because hospitals have larger problems with workflow processing,” Schlotman says. “We can increase efficiency in the OR and into the PACU, but if hospitals don’t have open beds, a bottleneck occurs that can affect admissions and surgeries.”

Hospitalwide patient tracking systems can help departments determine bed availability.

“If an admissions clerk admits an elective patient to the only available bed and there are no ICU beds, a patient has to stay in PACU until a bed opens,” Schlotman says. “Then they can’t schedule more surgical cases. Knowing where patients are is important for the whole hospital.”

—Jay Greene

Jay Greene is a freelance writer in St Paul, Minn.
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The conference will be at the Hyatt Regency in historic Albuquerque.

The brochure for the conference will be available on the OR Manager website, www.ormanager.com, in late January.
Workplace

Enrollments up, but not enough

Enrollments in baccalaureate programs in nursing were up 16% in fall 2003 over the previous year, according to preliminary figures from the American Association of Colleges of Nursing (AACN).

This continues a 3-year upward trend but still is not enough to address the RN shortage, which is expected to intensify over the next 10 years.

Though interest in nursing is running high, AACN says not all students can be accommodated. Nursing schools don’t have the space, the funds, or the faculty to handle more students.

—www.aacn.nche.edu

Wider use of foreign-born RNs likely

Trends in RN employment and earnings suggest the nursing shortage crisis may be over—temporarily.

Though RN employment and earnings increased sharply in 2002, two thirds of the employment increase came from RNs aged 50 and older, with the remainder from foreign-born RNs.

These trends reflect underlying forces that are likely to dominate the RN workforce for years to come, say researchers.

Demand for RNs is expected to increase 40% over the next 20 years, mostly from hospitals. Without a corresponding increase in the RN supply, further shortages and wage pressure are likely.

More reliance on older and foreign-born RNs is the result of a fundamental shift in the RN workforce—the decline in younger women choosing nursing as a career. Older and foreign-born RNs so far have taken up the slack because higher wages have encouraged more of them to work. But the number of older RNs is expected to peak around 2010 and then decline as they begin to retire.

If there isn’t a dramatic turnaround in interest in nursing careers, foreign-born RNs will likely become an increasingly important part of the nursing workforce.


ANA unveils ergonomics campaign

The American Nurses Association (ANA) has launched an ergonomics campaign called Handle with Care. The effort aims to prevent musculoskeletal disorders through greater use of education, assistive equipment, and patient-handling devices.

Nursing personnel have the highest workers compensation claims rates of any occupation or industry. An estimated 12% of nurses leave the profession annually because of back injuries. More than 52% say they have chronic back pain.

ANA President Barbara Blakeney notes that these statistics show that poor ergonomics hurts nurses and patients, whose nursing care is already threatened by the growing nursing shortage.

The campaign includes a conference to be held March 2 to 5, an educational effort, resources for injured nurses, and partnerships with other nursing organizations.

—www.nursingworld.org/handlewithcare

Please see the ad for OLYMPUS ENDOSCOPY in the OR Manager print version.
COX-2 inhibitor improves pain outcomes

Giving the COX-2 inhibitor rofecoxib (Vioxx) before—and continuing after—total knee replacement reduced patients’ need for opioids and improved their clinical outcomes, according to a study published in JAMA.

The study is thought to be the first to show that COX-2 inhibitors lead to improved outcomes for postoperative pain. Previous studies have focused on reduced opioid consumption.

In one important finding, patients who took the COX-2 inhibitor regained their range of motion faster than those who took a placebo. By the time they went home from the hospital, more patients were able to flex their knees enough to climb stairs. Within a month, more had enough flexibility to tie their shoes. They also slept better. Fewer had vomiting postoperatively and needed an antiemetic drug.

All of this not only means less pain and a faster recovery for patients but most likely lower costs, notes the lead author, Asokumar Buvanendran, MD, of the Department of Anesthesiology at Rush-Presbyterian-St Luke’s Medical Center in Chicago.

In the controlled, double-blinded trial, 70 total knee patients at Rush were randomly assigned to one of two groups:

- The study group received 50 mg of rofecoxib starting 24 hours before surgery and the day of surgery, which was continued for 5 days. Then 25 mg of rofecoxib was continued for 8 days afterward.
- The control group received placebo pills on the same dosing schedule as the study patients.

All patients had surgery under spinal-epidural anesthesia with sedation and were on patient-controlled epidural analgesia for the initial postoperative period. They then took oral pain medications. There were no significant differences in demographics or extent of preoperative knee pain.

Fewer side effects

The COX-2 inhibitors are particularly helpful for orthopedic patients because they don’t carry the risk of increased bleeding that conventional NSAIDs do, Dr Buvanendran notes. Thus, unlike conventional NSAIDs, COX-2 inhibitors don’t have to be discontinued 2 weeks before surgery but can be given before, during, and after surgery.

COX-2 inhibitors have fewer side effects than traditional NSAIDs because they are more selective. All NSAIDs act by inhibiting the cyclooxygenase (COX) enzymes, which aid in the production of prostaglandins, substances that facilitate movement of the pain impulse to the spinal cord. There are two types of COX enzymes: COX-1, which helps maintain normal body functions, and COX-2, which is released with inflammation and pain.

Conventional NSAIDs, such as ibuprofen and naproxen, block both COX-1 and COX-2, which can lead to the undesirable side effects, such as impaired coagulation, gastric irritation, and renal dysfunction. Because they block only COX-2, the COX-2 inhibitors provide pain relief while avoiding these side effects.

New light on preemptive analgesia

The study also sheds light on preemptive analgesia, a controversial and confusing issue in managing postoperative pain.

The new findings emphasize that to be effective, analgesics given before surgery need to be continued through surgery and recovery.

“The critical thing is that preemptive analgesia is not just giving one small dose before surgery but continuing to provide the blockade of pain impulses throughout the operative and postoperative period,” Dr Buvanendran stresses.

Patients must receive enough of the drug to keep high-intensity noxious stimuli caused by surgery from reaching the spinal cord and causing central sensitization of the dorsal horn neurons, which can make pain more difficult to manage and even lead to chronic pain syndromes.

Dr Buvanendran said Rush has incorporated the COX-2 inhibitor into its patient care regimen. The drug is included on the preoperative order sheets that are faxed to the surgical facility from the orthopedic clinic.

By publishing the study, he hopes the findings will reach internists, orthopedists, family practitioners, and nurse practitioners who see patients prior to surgery.

Clinical outcomes of COX-2 study

Compared with a control group, patients who received the COX-2 inhibitor rofecoxib (Vioxx) before and continuing after total knee replacement:

- had less total epidural drug consumption for 42 hours postoperatively and required less IV morphine for breakthrough pain
- had pain scores on a 0 to 10 scale of 2.2 compared with 3.5 in the placebo group
- had less postoperative vomiting with fewer patients requiring antiemetic therapy
- had greater range of motion in operated knee at hospital discharge and 1-month follow-up
- had less sleep disturbance on first 3 nights following surgery
- had no difference in blood loss, need for transfusion, or warfarin prescribed
- were more satisfied with anesthesia and analgesia.

Reference

Innovative call plan boosts staff morale

Every one of us knows the difficulties of securing competent OR staff. We are scrambling to find nurses who are available and convince them to work for us.

We know there is a work force out there. On any given day, I can make a call or two and have the staff required, provided by traveling staff agency. One of the reasons we can’t find enough full-time staff is because many of them work for these companies that charge high rates.

Our facility has sought ways to improve salaries and benefits so we can bring back our workforce. One way I tried to do this was to institute another way of providing on-call coverage in the operating room. We all know that call is a requirement for an OR position unless the facility provides in-house staff 24 hours a day. Currently, I have to assign on-call coverage from 3 pm to 7 am Monday through Friday and 24 hours on the weekends and holidays.

With a shortage of staff and an increased workload, it was becoming harder to assign on-call coverage and maintain a functioning staff. I knew I had to do something. I tried incentive bonuses. I also tried changing the staff from a 40-hour work week to an 8-hour day, which allows the staff to be paid time-and-a-half for every hour worked over 8 hours each day regardless of whether they were on call. That didn’t last long.

The staff told me money wasn’t everything, and quality of life was worth more. They were tired from working all day, then being on call all night. If they worked too many hours during the night, they were unable to come to work the next day. We were starting to have a lot of call-ins and call-offs. I was hearing, “I’m just too tired to work today,” even if the person hadn’t been on call the night before.

In talking and brainstorming with several staff, we came up with an idea. I said, “What if I guaranteed you 40 hours of pay each week, only you wouldn’t have to work during the day? Your only obligation would be to cover call from 7 pm to 7 am Monday through Friday. If you happened to work physically over 40 hours in that time period, I would pay you time-and-a-half for every hour over the 40 hours.”

That got the staff’s attention, and they wanted to hear more. After consulting with the Human Resource Department, we started the program on Jan 6, 2003. I asked the OR staff to come up with a name for these individuals. Several got together and coined the phrase, “Call Dawg.”

The program has been such a staff satisfier that now I hear, “I can’t wait until I’m the ‘Call Dawg.’” Employees tell me they are playing with their children and grandchildren, doing chores around the house, going to the beach, and just enjoying the time off. It’s like having a week’s vacation without using vacation time.

What is the impact on the budget?

Previously, I had to guarantee a minimum of 3 hours of time-and-a-half pay when an on-call staff member was called in, regardless of whether the person physically worked for 3 hours or not. With the “Call Dawg” concept, I do not pay that 3-hour minimum. The staff clock in when they are called in and clock out when they leave, and we keep a running total of hours worked. The only guarantee we provide is if they physically work over the 40 hours in 1 week, they get time-and-a-half. So far, the most time any team has worked while “Call Dawgs” is 17 hours, and one team didn’t work at all.

How does this help my budget? I just finished the cost analysis, and here’s what I found in a side-by-side comparison of actual salary dollars. With the assistance of the time-keeping system, I pulled all of the actual hours each call team was physically in-house. If the staff was here for less than 3 hours at a time, I calculated their pay for that call-in at the former minimum time-and-a-half rate for 3 hours.

I then took all of the hours that didn’t fit into the 3-hour minimum and calculated the pay at the time-and-a-half rate according to the actual hours worked. I then added all of the hours of on-call pay from 7 pm to 7 am Monday through Friday and deducted the on-call rate for each staff member when the person was actually in house. That is because the on-call pay stops when the staff is clocked in. I added this figure to my calculations.

In the first 8 weeks of the program, we saved $7,069 in over-time dollars and on-call pay. It gets better from there. In the second 8 weeks, we realized a savings of $7,122. The third 8 weeks yielded a savings of $7,742. After the program had been in place for 8 months, we had recognized a savings of $34,276 in on-call and over-time call-back salaries. If the numbers of on-call hours remain consistent, we could see annual savings of approximately $55,698 based on an average weekly savings of $1,071.

When doing your calculations for this program, keep in mind each employee’s hourly rate of pay.

This program is being described to new applicants and potential employees, and so far we are getting positive feedback. The administration is pleased with the cost savings and continues to provide support for the program.

Morale has improved considerably, and call-offs are practically nonexistent. Although the program is relatively new, so far it is a great success. We will continue to monitor costs and productivity, but for now you might want to try hunting down your own “Call Dawgs.”

—Cathy J Bailey, RN, MSN, CNOR
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Ambulatory surgery centers (ASCs) took a hit on payment rate updates in the Medicare reform bill passed by Congress Nov 25. But they won approval for development of a new ASC payment system that might benefit them in the long run.

The final legislation requires the government to limit payment rate updates to inflation minus 3 percentage points—a rate that is essentially zero with current inflation—starting April 1, 2004 through 2009. The ASC community was still sorting out in early December exactly how the Centers for Medicare and Medicaid Services (CMS) would interpret the updates in the law.

“It is hard to understand how ASCs can be expected to provide services in 2009 for 2002 prices,” said Kathy Bryant, executive director of the Federated Ambulatory Surgery Association (FASA). She noted that by law, Medicare is required to update payment rates regularly.

In failing to update the rates, she says Congress “lost another opportunity” to increase Medicare cost-efficiency by failing to give more support to ASCs. FASA has estimated that Medicare will save $600 million on surgical procedures performed in ASCs rather than hospitals in 2004.

On the plus side, Congress authorized CMS to move toward a new payment system. ASCs are currently paid flat rates according to nine payment groupings. The new legislation repeals a requirement that ASC payment rates must be based on a cost survey, which CMS has not done in almost ten years.

Under the reform bill, the General Accounting Office (GAO) will conduct a study to compare relative costs of procedures performed in ASCs with those performed in hospitals, considering data submitted by ASCs. The GAO will send its report and recommendations to Congress by Jan 1, 2005. Congress asked the GAO to recommend whether to base the new ASC system on the hospital outpatient prospective payment system. The new system is to be developed and implemented between Jan 1, 2006, and Jan 1, 2008.

ASC leaders, who have been talking to CMS about an alternative payment system for several years, see benefits to linking ASC payment rates to the hospital outpatient system, notes Craig Jeffries of the American Association of Ambulatory Surgery Centers (AAASC).

CMS data is more complete and up to date for hospitals than ASCs, and CMS is required to update hospital payment rates every year, which it has not done for ASCs. Hospitals are a potent lobbying force, and ASCs could ride on their coattails for possibly better reimbursement. Moreover, the hospital outpatient system provides add-on payments for some items such as medical devices that ASCs currently aren’t eligible for. Because hospital payments generally are higher than ASCs’, AAASC believes that although ASCs might see less reimbursement for some ASC procedures, they are likely to see increases for the majority.

Finally, ASCs succeeded in distancing themselves from specialty hospitals, which the hospital industry would like to limit. The reform bill places an 18-month ban on physician investment in new specialty hospitals while a study is conducted—which the Washington Post reported was a priority for the influential American Hospital Association.

ASCs did not want to get dragged into that debate because they do not want to become a target of hospitals’ efforts to restrict so-called “niche providers,” which hospitals contend skim off some high-paying services. Surgery centers have an exception permitting physician self-referral to ASCs in which they have an ownership interest, and ASCs do not want to see this exception jeopardized.

New payment system called for

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It is hard to see how ASCs can provide services in 2009 for 2002 prices.

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Encouraging better postop pain relief

Helping patients manage their pain is important to their recovery and their satisfaction with their surgical care.

Yet a recent national study finds 80% of ambulatory surgery patients said they still had moderate to extreme pain after discharge. Results had actually declined since a similar study in 1995.

Patients were more worried about pain than about whether the surgery would improve their condition. Some even decided to postpone their surgery because of pain worries, according the researchers led by Jeffrey Apfelbaum, MD (Anesth Analg 2003; 97:534-540).

Three nurse experts offered practical suggestions for improving pain management: Rebecca Klungreseter RN, MAEd, MSQSM, CPAN, PhD(c), perianesthesia manager at St Joseph Hospital, Orange, Calif; Denise O’Brien, RN, MSN, CPAN, CAPA, clinical nurse specialist in peri-anesthesia care at the University of Michigan, Ann Arbor; and Thomas Quinn, RN, MSN, AOCN, project director of MGH Cares About Pain Relief at Massachusetts General Hospital, Boston.

Examine attitudes about pain

Take a look at your own attitudes toward pain control and the attitudes of the staff. Does your staff believe nurses can assess pain better than patients? That patients who take opioids for relief of chronic pain are addicted?

Assess knowledge levels to identify needs and plan education. Try giving the staff the true-and-false questions on p 25. Then go over the answers. “It’s a good opportunity for teaching,” Klungreseter suggests.

Also see Quinn’s answers to nurses’ frequent questions in the sidebar on page 28.

Educate nurses and physicians

Nurses and physicians may get little instruction on pain management in their basic education. Here are some ideas for raising knowledge and awareness:

• Invite a surgeon or anesthesiologist with a special interest in pain management to present brown bag talks on subjects like regional anesthesia or COX-2 inhibitors, which are being used more often for surgical patients.

• Discuss case studies. Pull charts for challenging cases in your facility and invite a pain management specialist to discuss them with the staff.

• Learn from patients. Postoperative phone calls are a good learning opportunity, O’Brien suggests.

“Too me, it is very effective for the nurse who cared for a patient to talk to the same patient about their pain postoperatively. It opens their eyes.”

But be careful about asking patients, “How satisfied were you with your pain management?” Research shows patients often say they are satisfied even when they had pain. They think pain is to be expected after surgery, or they don’t want to be perceived as complainers.

Review pain assessment tools

Has your facility adopted a consistent pain management scale for adults who can verbalize their pain? Does the staff have additional tools for assessing pain in special populations? Have you identified resources to assist in understanding patients’ cultural needs?

Resources


Review documentation

Are nurses capturing their pain assessment so others can reassess and follow up? That is important for meeting the Joint Commission on Accreditation of Healthcare Organizations’s (JCAHO) pain management standards.

Resources


—Improving the Quality of Pain Management Through Measurement and Action. Practical knowledge and strategies for improving pain management.

—Pain: Current Understanding of Assessment, Management, and Treatments. Background on pain as well as information on assessment, types of treatment, and strategies for improvement.


Consider comfort measures

Comfort is a holistic concept that considers pain not only as a physical sensation but also as intensified by other factors such as fear, anxiety, anger, and noxious stimuli like noise.

Comfort measures for surgical patients might include having their family present in the postanesthesia care unit, cold therapy, warm blankets, light massage, lowered lights, and music.

Resources

American Society of PeriAnesthesia

Reinforce with patients that it is OK to call.

COX-2 Inhibitor improves postop pain outcomes. See p 21.
Nurses (ASPN) Pain and Comfort Guideline, 2003. www.aspan.org This new guideline encourages nurses to address discomfort as well as pain. ASPAN is developing a resource manual to go with the guideline.
The Comfort Line. Web site about the comfort theory in nursing developed by Kathy Kolcaba, RN, PhD. www3.uakron.edu/comfort

Encourage transition to oral medications
Have patients start on oral medications before they leave the facility so there is time to ensure the medications are working, O’Brien advises. It’s helpful for the staff to have laminated cards with dosing guidelines and dose equivalents for intravenous and oral medications.

Resources
Sample medication cards are free at www.mosby.com/pain
McCaffrey M. Switching from IV to PO. AJN. May 2003;103:62-63.

Give patients clear, complete instructions to take home
To reinforce patient teaching and instructions on pain management and other information about their care, St Joseph provides patients with a Personal Recovery Plan. The plan has a grid, like a care path, with information and instructions for each phase of the surgical process. (An example is in the OR Manager’s Tool Box at www.ormanager.com.)

Consider patients with chronic pain
Surgical patients with chronic pain face a double challenge for pain control. Raise the staff’s awareness of these patients’ needs, O’Brien suggests.
• Generally, these patients should continue their regular pain medication preoperatively.
• Realize that taking medication for relief of chronic pain is not considered addiction.
• Understand pain control issues are complex for these patients and may require consultation from a pain specialist.

Support nurses in being patient advocates
Encourage nurses to take time to talk to patients and families about pain, even though schedules are rushed. Before discharge, nurses should reassess pain and ask patients if they think their pain is controlled well enough so they will be able to get up, move around, rest, and take care of themselves after they go home.

“Patients often hesitate to call their physician after they go home. Even patients who have drug reactions won’t call,” O’Brien says. “Nurses need to reinforce with patients that it is OK for them to call—you need to give them permission. Nurses need to let them know that we don’t want them to hurt because that won’t help them to rest and get well.”

Test yourself on pain management
Answer these true and false questions:

1. ___ Observable changes in vital signs must be relied upon to verify a patient’s statement of having severe pain.
2. ___ Because of an underdeveloped neurological system, children under 2 years of age have decreased pain sensitivity and limited memory of painful experiences.
3. ___ If the patient can be distracted from pain, this usually means the person does not have high pain intensity.
4. ___ Patients may sleep in spite of severe pain.
5. ___ Aspirin 650 mg PO is approximately equal in analgesic effect to meperidine (Demerol) 50 mg PO.
6. ___ The pain literature recommends using a single analgesic agent rather than combining classes of drugs (eg, opioid plus nonsteroidal anti-inflammatory drug) or use of adjuvant drugs (eg, anticonvulsants, tricyclic antidepressants).
7. ___ The usual duration of action of meperidine IM is 4 to 5 hours.
8. ___ Research shows that promethazine (Phenergan) is a reliable potentiator of opioid analgesics.
9. ___ Patients with a history of substance abuse should not be given opioids for pain because they are at high risk for repeated addiction.
10. ___ To be effective, heat and cold should be applied only to the painful area.
11. ___ Analgesics for postoperative pain relief initially should be given only when the patient asks for medication.

See answers on p 29.

Additional resources
McCaffrey Pain Library. Series of videos by pain management expert Margo MacCaffrey. Lippincott Williams & Wilkins. www.lww.com
Massachusetts General Hospital. MGH Cares About Pain. Web site with information for patients, families, and clinicians. www.massgeneral.org/painrelief
Questions nurses ask about pain control

Questions are answered by Thomas E. Quinn, MSN, RN, AOCN, project director for the MGH Cares About Pain initiative at Massachusetts General Hospital, Boston.

Q. What if a patient refuses to take pain medication? Some patients are afraid of addiction.

A. The fear of addiction is one of the major reasons patients refuse to take pain medications. In fact, cancer patients who regularly take opioids for their pain have as many compliance problems with their pain medication as hypertensives do with their hypertensive medication. The research shows, however, that the number one reason patients don’t want to take opioids is not addiction, it’s constipation.

You need to explore with the patient what is going on. Does the concern have to do with their values, a knowledge deficit, or a fear of side effects? Once you find out the issue, you can begin the appropriate education.

If a patient has a fear of addiction, you can explain that people who take opioids for legitimate medical reasons almost never become addicted. This is particularly true for surgical patients who take medication for acute postoperative pain. If they follow the normal course of recovery, within a few days they will decrease their use of the medications and then stop them all together.

Almost everybody can be susceptible to constipation from opioids. Too often, that effect is underestimated for postoperative patients. The old adage still holds—the hand that writes the opioid prescription should also write the laxative prescription.

Q. One of our toughest issues is how to manage patients who have been taking a lot of medications for chronic pain. Do you have any suggestions?

A. This is a difficult issue, but it doesn’t have to be as difficult as we make it. It’s important is to do some planning up front. Nurses assessing patients preoperatively need to find out what they have been taking on a regular basis and what they have had in the past several hours prior to surgery.

If they are taking their medications on a PRN basis rather than on a schedule, you need to tease out how much they have been taking. You can say, “OK, so you take Percocet for pain. Tell me how much you take and how often you take it. Is what you have taken in the past couple of days typical of what you have been taking over the past couple of months?” Also determine if the medication they were taking by mouth was made up for them before they went to the OR.

Knowing how much medication patients have been taking regularly is critical information for planning what they will need postoperatively. If they were taking 40 mg of morphine six times a day, they will need at least that much postoperatively, and possibly more. Postop orders of 5 to 10 mg of morphine every 4 hours just isn’t going to make it for that patient.

Surgeons typically don’t ask about this. Anesthesiologists might be more likely to ask. It is a very important part of the nursing assessment because then you can plan and order appropriate dosages for postop care, depending, of course, on what they had in the OR.

Q. Do you have any suggestions about how to manage a patient who has a history of opioid abuse?

A. You need to explore openly what you are seeing and what you are hearing from the patient. You need to say that you want to be sure that what you are doing is safe for them—and that you are not trying to withhold opioids. The last thing we are going to do in the postanesthesia care unit is to cure someone of an addiction. We have no professional responsibility to attempt to do that in that setting. Moreover, it is unethical to withhold medication from any patient in pain.

We need to be open and clear with patients about how we are going to manage their pain. We need to tell them that we expect them to be participants in this process and ask them to tell us accurately how much pain they are having. If they feel they cannot tell the difference between the need for the psychological effect and the analgesic effect, they should be open with us about that as well.

New research for managing pain

Believe patients about pain

People have different pain thresholds—some are very sensitive to pain while others say it hardly bothers them. A study verifies that some really do feel more pain than others. Using MRI, researchers found highly sensitive persons had more frequent and robust brain activity with pain than those who were less sensitive. The study provides evidence that clinicians can have confidence in patients’ reports of pain, the authors note.


Address racial and ethnic disparities

African-Americans and Hispanics are more likely to be undertreated for pain than non-Hispanic whites, according to a review article. One study of postoperative pain found marked ethnic differences in analgesic consumption in patients recovering from open reduction and internal fixation for fractures. The authors say the sources of disparities are complex, involving patient, clinician, and system factors. They recommend more education and research.

Improving pain control for lap chole

Effective pain management is essential to performing more procedures in an outpatient setting. How can you encourage a change in practice to enable more patients to go home comfortably the same day?

St Joseph Hospital in Orange, Calif, has been studying pain management protocols as part of a project to move more laparoscopic cholecystectomies from the main OR to its outpatient pavilion. St Joseph has the third busiest outpatient center in California, performing more than 12,000 procedures a year.

The perianesthesia manager, Rebecca Klungreseter, RN, MAEd, MSQSM, CPAN, PhD(c), has been working with physicians to encourage more use of multimodal pain management. Pain management is a passion for Klungreseter, who is writing her doctoral dissertation on the subject.

Multimodal analgesia, the recommended method for postoperative pain control, involves using multiple drugs and techniques to create a synergistic effect that keeps patients comfortable with lower doses and fewer side effects.

“Single-drug therapy is not the way to go with nausea and vomiting or pain,” she says. “With multimodal therapies, we don’t have the problems postop that lead to admissions or delayed discharge.”

In a project guided by the surgical services improvement committee, a high-volume surgeon was enlisted to move his lap chole to the outpatient pavilion and allow data to be collected on those cases. The data is compared by anesthesiologist, without using names, to see which pain management protocols give the best results.

“The data gives you support to have discussions with the anesthesiologists about what is effective. You can use it as an education tool,” Klungreseter says.

The hospital favored moving lap chole to the outpatient arena to free up capacity in the main OR. The effort is supported by the medical director of surgical services, who is an anesthesiologist.

Data has been collected for more than 27 of the surgeon’s patients including:
- medications given preoperatively, intraoperatively, and postoperatively
- duration of surgery
- time the patient spent in Phase I and II postanesthesia care
- outcomes from the postoperative phone call 24 hours after discharge.
- evaluation of postoperative emergency room visits within 30 days of surgery.

Meds predict recovery

The data shows clear patterns. “We can look at the data without the names and see the trends,” she says. “Some anesthesiologists use multimodal therapies in the OR and others not so much. We can look at the meds that were given in the OR and predict what the patient is going to need in recovery.”

For the most part, patients in the lap chole series have gone home in 2 to 2 1/2 hours.

Early in the series, two patients had discharges delayed by nausea. Both had the same anesthesiologist. Both had received 50 mg of meperidine (Demerol) with no antiemetic drug. Demerol is out of favor as a first-line drug for postoperative pain because a metabolite, normeperidine, can cause seizures in doses as low as 100 mg.

“These patients had significant rescue attempts for nausea and pain,” Klungreseter says.

Another patient whose recovery was delayed had received 1 mg of hydromorphone (Dilaudid) and 100 micrograms of fentanyl but no dexamethasone (Decadron) in the OR. In recovery, the patient needed to be given ketorolac (Toradol) as well as more hydromorphone.

Patients who have gone home on time have received multimodal drug regimens that included NSAIDs such as the COX-2 inhibitor rofecoxib (Vioxx) before surgery or ketorolac IV in the OR. They also received the antiemetic ondansetron (Zofran) IV in the OR.

Continued on page 29

Unplanned admissions after lap chole

Published reports have identified factors that lead to unplanned admissions after laparoscopic cholecystectomy:

A study of 387 outpatient lap chole patients at Denver Health Medical Center found the three leading factors for unplanned admission were:
- being over age 50
- being in American Society of Anesthesiologists class 3 or higher
- having a surgery start time later than 1 pm


In an analysis of 731 outpatient lap chole patients at Brigham & Women’s Hospital in Boston, the most significant factor was surgery lasting more than 60 minutes, which boosted the risk of admission four-fold. Only 3.4% of patients had an unplanned admission.

Please see the ad for
SPECTRUM SURGICAL INSTRUMENTS
in the OR Manager print version.
Answers to true and false questions

Answers to questions on p 25.

1. **False.** The patient’s response to pain is individual and is affected by a variety of coping mechanisms; therefore, vital signs may or may not be elevated when a person is experiencing severe pain.

2. **False.** Pain is possible as early as 24 weeks gestational age. Research indicates that neonates actually have a heightened sensitivity to pain that decreases with age.

3. **False.** Patients may rely on a variety of coping mechanisms to tolerate their pain, and adjunctive therapies given with pain medication (eg, music, massage, and other measures) may help reduce anxiety and, as a result, perception of pain.

4. **True.** Neither sleep nor sedation can be equated with pain relief. Many drugs sedate without relieving pain. Patients with severe pain may be able to sleep if distracted from pain with coping and other mechanisms. Sleep does not indicate pain level. If medication has been given, consider use of a sedation scale for additional dosing needs.

5. **True.**

6. **False.** The World Health Organization recommends a combination of drug classes (multimodal therapy) to attack more of the underlying pain mechanisms as well as allow for reduced dosing of each drug, thereby reducing side effects and improving efficacy.

7. **False.** Research shows the usual clinical effect of meperidine is only 2 to 3 hours. In addition, meperidine has an active metabolite called normeperidine, which in too-high doses (as low as 100 mg) or in renal insufficiency may cause seizures. Meperidine also has twice the central nervous system effects and half the pain relief of other agents.

8. **False.** Promethazine has not been shown to potentiate analgesics. In fact, it has been found to increase the perception of intensity of pain and increase the respiratory depression, sedative, and hypotensive effects of the opioid. It also further lowers the seizure threshold when given in combination with meperidine. Also, the different durations of action (4 to 6 hours for promethazine and 2 to 3 hours for meperidine) are mismatched.

9. **False.** Studies show that appropriate pain relief can be obtained utilizing opioids for the patient with a history of substance abuse. Careful consideration must be given to the patient’s level of pain, the selection of the medication, and use of multimodal approaches to reduce the opioid dose and still adequately relieve pain.

10. **False.** In fact, alternating heat and cold has been shown to enhance pain relief. Application to areas other than the actual painful area may be helpful. Pain tends to radiate. Therefore, enlarging the area of heat/cold application can be helpful. For example, if the hand hurts, it can be helpful to apply heat/cold to the entire arm.

11. **False.** They should be given around the clock. Especially for the first 24 hours, around-the-clock dosing allows for better attainment of steady-state drug levels and pain relief. PRN dosing can then be used for breakthrough pain. Unrelieved pain in this period can have deleterious effects on patients’ recovery. Depending on their individual, family, or cultural situation, patients may not ask for medication when they need it. The staff should not be the determinant of whether the patient has pain and if so, how much.

Opioids were given but not in high doses.

**Shoulder pain**

To avoid postoperative shoulder pain after lap chole, the surgeon evacuates the gas used to insufflate the abdomen by disconnecting the tubing from the insufflator and pressing on the abdomen while the patient is supine, notes Diana Zirschky, RN, CNOR, assistant director of the outpatient OR.

The data is being shared with the physicians by the medical director of surgical services. To help patients with pain management and other care after they go home, St Joseph has personal recovery plans (PRPs). The plans, which are given to patients before surgery, include a grid, like a care path, with information and instructions for each stage of the surgical process. (An example is in the OR Manager’s Tool Box at www.ormanager.com.)

Other surgeons at St Joseph’s are expressing interest in performing outpatient lap choles. A surgeon at a nearby outpatient surgery center would like to bring lap choles to the hospital but wants to do them starting at 3 pm or 4 pm.

“He has a track record that he can do them that way. But it is not the surgeon, it is the anesthesiologist,” Klungreseter notes.

“If we use the multimodal therapies to control the pain and nausea, I wouldn’t have a problem with it.”

“Our series shows that we are able to send them home in 3 hours, and they’re comfortable. Without the multimodal analgesia, they would have suffered for days.”

**Reference**

Please see the ad for TVL HEALTHCARE INC. in the OR Manager print version.

Please see the ad for LEHIGH VALLEY HOSPITAL in the OR Manager print version.

Please see the ad for THE METHODIST HOSPITAL in the OR Manager print version.
Please see the ad for SKYTRON INC. in the OR Manager print version.
CDC advises on SARS preparedness

Preparing for a possible reemergence of severe acute respiratory syndrome (SARS), the Centers for Disease Control and Prevention (CDC) advises hospital workers to “think beyond the patient” and consider whether family and friends accompanying a SARS patient to the emergency room could also be infected and infect others.

This is a lesson learned last year from a Toronto patient with SARS symptoms brought to the hospital by his wife. The wife infected others in the waiting room because she was not given a mask or put under surveillance.

CDC epidemiologist Linda Chiarello cautioned nurses and hospital employees to learn how to use masks and other personal protective equipment correctly.

—www.cdc.gov/ncidod/sars/sarsprepplan.htm

California hospitals brace for nursing ratio impact

California hospitals could have to decide which law to break as the nation’s first law mandating patient-to-nurse ratios took effect Jan 1. Hospitals must maintain certain numbers of nurses to care for patients, yet can’t turn emergency patients away. That could create a conflict, the Sacramento Business Journal reported. Gov Arnold Schwarzenegger said he would not seek to delay the regs.

One hospital in the Sacramento area had done a test run on one unit and found it couldn’t meet the ratios without pulling nurses away from other units.

Hospitals said they would do their best to comply but might be thrown off by a big emergency or flu outbreak. Unions, which favored the law, said they would be vigilant for infractions. The law will be enforced by the state Department of Health Services, which inspects hospitals every 3 years and will respond to complaints.

When fully implemented in 2005, the required ratios will range from one to one in trauma units to one to five on medical-surgical units.

—www.bizjournals.com/sacramento

Congress places hold on MD investment in specialty hospitals

Congress placed an 18-month moratorium on physician investment in specialty hospitals in the new Medicare reform bill signed by President Bush Dec 8.

The moratorium applies to cardiac hospitals, orthopedic hospitals, and other hospitals that specialize in surgery. Congress asked for studies by the Medicare Payment Advisory Commission and HHS on the impact of these hospitals.

The law doesn’t prohibit specialty hospitals from being built. Nor does it prohibit physicians who are not investors from referring patients to any type of hospital.

Full-service hospitals are concerned they are losing well-reimbursed procedures to the specialty hospitals, which they say they need to help pay for services they lose money on.

Specialty hospitals argue they are more efficient and cost-effective.

Hospitals struggle with financing

More hospitals are sliding from the ranks of the financially stable and finding it more difficult to get financing for capital and expansion of services, finds a study by the Healthcare Financial Management Association (HFMA).

The trend can have a profound affect on physicians who admit patients and rely on facility upgrades to attract patients. Hospitals perform best when there is a partnership with physicians that is in the physicians’ best interest, HFMA President and CEO Richard L. Clarke, told the Nov 17 American Medical News.

Hospitals with broad access to capital declined from 42% in 1997 to 36% in 2002, and those with limited access to capital rose from 11% to 19%. Operating margins have declined across the board but have declined more in hospitals with limited financing options.

—www.amednews.com