Preoperative care

Preop preparation: Building bridges for more seamless information flow

How does your organization determine which preop tests a patient needs, if any? Which patients are referred for a consult by a specialist? Is there a better way to assemble the many pieces of information needed before the day of surgery?

Preop preparation is a complex process that begs for a more seamless information flow. The process will take a leap forward once hospitals and physicians' offices share compatible EHRs.

Most are in transition. In the meantime, surgery departments are finding ways to streamline their processes, sometimes aided by automation but mostly through diligent efforts to improve logistics, adopt evidence-based guidelines, and to see that the guidelines are used consistently.

In this issue, we look at software coupled with efforts to achieve the right level of screening.

Special focus: Preop preparation

Three articles in this issue look at the preop process:
- Page 6: Streamlining preoperative care: Role of software
- Page 9: Electronic tool aids in navigating preop process
- Page 12: Duke protocol ensures right level of screening

Strong capital purchasing process calls for partnership, transparency

Planning for capital purchasing requires skill. If the process isn't effective, the OR director will end up with unhappy surgeons and staff. But done effectively, capital purchasing can build relationships among surgeons and hospital and OR leaders.

“Capital planning is a challenge in today’s economy,” says Dana Crompton, MHA, vice president of perioperative services for Long Beach Memorial Medical Center, a 3-hospital system in California.

Crompton and Gail Avigne, MSN, RN, CNOR, nurse manager of 2 outpatient centers, Shands Florida Surgical Center and Children’s Surgical Center, Gainesville, share their processes for successful capital purchasing.

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PRECISION.
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Where would you expect a patient to look to learn about the quality of your hospital’s services? Maybe the Joint Commission, Hospital Compare, or HealthGrades? Think Facebook, Google Reviews, or YouTube—that’s where many are likely to turn first.

Social media increasingly are the go-to source for consumer reviews of any kind.

Today, hospitals and health systems know that no matter how long their list of recognitions—Top 100 Hospitals, Magnet hospital designation, Joint Commission Quality Check, and so on—their reputation can be marred or enhanced by what patients share online.

It’ll be right there on Google Reviews or Yelp for everyone to see.

Social media’s big role
The big role of social media caught our attention when we read ECR Institute’s new risk management report on social media.

We learned that according to a 2011 study from the National Research Corporation, 41% of nearly 23,000 respondents said they use social media, primarily Facebook, to research health care decisions. Nearly one-third rate their trust in social media as “high” or “very high.”

Some organizations are embracing social media. Examples from 20 hospitals with inspiring social media strategies were reported in Ragan’s Health Care Communication News (www.healthcarecommunication.com).

A couple of examples:
• After a patient’s positive experience with her carcinoid cancer treatment at Nebraska Medical Center was shared on YouTube, the hospital had so many requests it opened a monthly clinic for the condition. Watch a video of an interview with the patient. Click to pause or start the video. To replay the video, reload the page.

The hospital has a web page where it invites patients to share their stories: www.nebraskamed.com/lifesavingstories/default.htm
• The University of California San Francisco raised over $800,000 for its new Benioff Children’s Hospital, thanks partly to the Facebook game FarmVille, which allowed players to purchase virtual “candy cane seeds” that sent 100% of the profits to the challenge. The two leading teams will have the honor of naming a dedicated space in the new hospital.

A need to connect
Both examples show how hospitals have made social media work for them.

But ECR Institute advises that this can’t be haphazard effort. Health care organizations need a social media plan that outlines the goals and intended audience, defines which staff may participate in the organization’s official social media, and identifies needed resources and tools.

Social media are no substitute for sound, well-designed rating systems. But they satisfy a human need for connections and stories.

—Pat Patterson

The ECR Institute report is free (after registration) at www.ecri.org
How critical is it to have the very best integrated OR?

Critical enough to read this?

Black Diamond Video has set the bar for operating room and procedural suite audio visual integration with its leading technology. This is why many of the most renowned medical institutions in the world are choosing Black Diamond Video.

Black Diamond Video is Years Ahead of the Competition
Black Diamond Video is engineer driven, providing abilities today that will take your ORs years into the future. Today, your ORs will be able to process and route 3D imaging and 4 times greater than 1080p resolution! With Black Diamond Video, you won’t get stuck with an integration system that won’t support the future of higher and higher resolutions.

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Hospitals and clinicians love our all-digital technology and operating room staffs love our ease of use simplicity. Regardless of the source signal type, Black Diamond Video provides an all-digital infrastructure with one type of ultra-high-resolution medical device connection that can be plugged securely into any available port in the operating room. Don’t be fooled by other seemingly similar solutions because they are anything but similar.

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Black Diamond Video does not use the term “future proof” loosely. Future Proof means hospitals will have the ability to adapt to future technologies and easily expand the Black Diamond Video integration system without having to revisit large capital equipment funding initiatives several years down the road.

Pushing the Envelope
Black Diamond Video has revolutionized operating room integration with its technology and is forging forward with continued state of the art design and development. New technologies and products emerging from Black Diamond Video are going to continue to dramatically improve the scope of medical integration. Current and future customers will be able to utilize these new Black Diamond Video products and technologies without having to revamp their integration systems.
BMP use up sharply, but outcomes not improved

Use of bone morphogenic protein (BMP) has risen sharply in the past decade, adding costs without evidence of better outcomes, according to a study in the February 2012 issue of Spine.

BMP use rose rapidly, from 5.5% of lumbar fusions in 2003 to nearly a third (28.1%) of procedures in 2008, in a study led by Richard A. Deyo, MD, of Oregon Health and Science University, Portland.

Complication and 30-day readmission rates were “nearly identical” with and without BMP for the 17,000 Medicare patients in the analysis, who had spinal fusion for lumbar stenosis, the authors report.

BMP didn’t reduce the rate of repeat surgery. In both groups, about 3% of patients had repeat surgery within 1 year, and about 6% needed another operation at 2 years. The repeat surgery rates were also similar for patients who had more complex spinal fusions with and without BMP. Reoperation rates were similar even after the group was stratified for previous surgery, surgical complexity, and demographic and clinical factors.

In one difference with BMP, significantly fewer patients were discharged to a skilled nursing facility (16% vs 19%). Hospital charges for operations using BMP were about $15,000 more than for procedures without BMP, though DRG reimbursement averaged only about $850 more.

The authors say that the rapid growth of BMP use without an increase in complications suggests it can be used safely as an alternative to a graft from the patient’s own bone. But spinal fusions with BMP cost more with no reduction in the need for repeat surgery. On the other hand, fewer patients need nursing home care, which may partly offset the higher costs, they note.

Routine care outcomes

Previous small studies have reported higher rates of “solid fusion” in patients having fusions with BMP compared with bone grafts. The authors say the new study is one of the first to look at how BMP affects outcomes for patients in routine care, who often differ from those in clinical trials.

BMP was adopted rapidly, and about half of its use has not been for more complex surgery. Much of its use has been off-label.

The authors note the study has limitations, including a lack of information on key outcomes such as pain and function.

They say their findings suggest there is value in studying the effectiveness of new technology in routine care for a full range of patients, along with generating evidence from randomized trials.

BMP, on the market since 2002, is a growth factor that can induce the formation of new bone. It is an alternative to using the patient’s own bone, typically obtained from the iliac crest, as a source of graft material.

Reference

A 65-year-old man with heart disease schedules a knee arthroscopy with his orthopedic surgeon. Thirty miles away, a note pops up to notify the hospital’s presurgical clinic of the impending surgery. A nurse practitioner pulls up the patient’s electronic health record (EHR), where she reviews the patient’s history. Comparing the history with the preop screening criteria, she can see the patient needs to be seen in person before the day of surgery. An appointment is scheduled and preop tests ordered using the clinic’s standing order set.

At Geisinger Medical Center, part of an integrated health system based in Danville, Pennsylvania, named 9 times to Hospitals & Health Networks Most Wired list, the preop preparation is largely paperless.

“All of the clinics are up on Epic [the software platform], and we can exchange information in real time,” says Cindy Bird, BSN, RN, clinical director of the 28-OR main surgical suite.

Even from medical clinics in neighboring cities, “we can pull up the patient information and see what was done during the clinic visit.”

The result: a more accurate record at clinicians’ finger tips, huge time savings, and powerful capabilities for reporting data on case delays, cancellations, and other metrics.

Once hospitals and physicians’ offices share compatible EHRs, many cumbersome steps in the preop process—gathering faxes, rounding up lab results, and chasing down missing consents—will go away.

Most organizations aren’t there yet. Less than half (43%) of respondents in the 2011 Most Wired survey could share a continuity-of-care document across MD offices, hospitals, and other providers.

The government’s health IT initiative and the trend toward health systems’ acquisition of physician practices are helping to move these initiatives forward.

Single platform is trend
The trend, says David Young, MD, an anesthesiologist with a long interest in preop automation, is to have a single IT platform that enables patient information to flow seamlessly from physicians’ offices and clinics to the hospital, where the patient’s entire EHR is available in real time to any clinician treating the patient.

“In a community, if you have a continuously shared EHR, it is an immense advantage,” he says.

“Being able to see the whole continuum, the patient’s history and all of their labs, just makes sense.”

That’s why, he says, a number of organizations are adopting EHRs from Epic Systems, which offers a single outpatient-inpatient platform. Epic was rated the top overall health care software vendor in the 2011 Annual Best in KLAS Awards from KLAS Enterprises, a firm that reports on users’ experience with health care software.

At Dr Young’s institution, Advocate Lutheran General in Park Ridge, Illinois, nurses in the preop testing center can view some portions of outpatient records entered in Allscripts, the EHR used by employed physicians’ offices, through a portal in Cerner, the hospital’s information system, though it is not a seamless connection.

“If the patient has recently seen a primary care provider, all of the information comes over preoperatively, but it does not populate the patient record,” says Dr Young. He was developer of an automated preop questionnaire and scoring system acquired by DocuSys and now owned by Merge Healthcare.

Patient interface
To aid preop preparation, Surgical Information Systems (SIS) is working on an upcoming version that would offer more support for a patient to enter preop information either at the physician’s office or from home via the Internet.

The information would then be integrated into the patient’s record to support the nurse’s workflow, notes Marion McCall, BBA, RN, CNOR, CPHIT, director for SIS’s client solutions group.

Another trend she sees is the ability to track and manage the status of patients’ preop preparation. Has the phone assessment been completed? Have tests been scheduled? Will the patient be seen in person before the day of surgery?

The data can be analyzed later to determine how the preop process affects delays and cancellations.

For example, which types of patients should have testing scheduled further in advance?

Advances in automation will have a number of advantages for clinicians, she says:
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• less redundancy in collecting patient information
• information available to all perioperative disciplines without the need to re-enter data
• ability to set up alerts about patient conditions like sleep apnea or a difficult airway.

Software to bridge the gap
As health systems work toward more integrated electronic health records (EHRs), here’s a look at software currently available to aid the preop process.

ePREOP
Intended to bridge the gap between the physician’s office and surgical facility, this software is available as a stand-alone product and is exclusively marketed through Picis as part of its perioperative suite.
ePREOP can function as a patient portal, allowing the patient to enter information from home, the surgeon’s office, or a preop assessment area, the company says.
ePREOP can take information from the patient’s EHR, personal health record, or nursing assessment and run it through algorithms based on evidence and consensus-based guidelines and the facility’s own protocols to generate preop testing and assessment recommendations.

If the hospital lacks an EHR, a freestanding preop record is available that a patient can access from a kiosk, tablet, or personal computer. The data is sent to the physician’s office and surgical facility, along with the testing recommendations and personalized preop instructions.

“There is always a nursing review of the patient,” stresses David Bergman, DO, the anesthesiologist who developed ePREOP. The advantage, he says, is that the nurse doesn’t have to re-enter information already in the EHR.
The nurse can review the personalized preop instructions with the patient. For example, does the patient need to bring a sleep apnea machine on the day of surgery? Which medications should be continued or discontinued?

Information from ePREOP can flow to the OR information system and anesthesia information management system, where clinicians can review it.

Dr Bergman says he developed the program because he noticed inconsistent testing patterns at his hospital.

“We would have a healthy 18-year-old coming in for a knee arthroscopy who would end up getting all of these unnecessary tests,” he says. “Then we would have an 80-year-old with renal failure and no EKG on the chart.”

He found his institution was spending $98 per patient in unnecessary tests.

An added advantage of capturing preop information electronically as part of Picis software is that it can be integrated with other data collected on the day of surgery, says Joe Smith of Picis. Analytics tools can be applied to provide reports useful for improving care.


Merge Presurgical
This software, formerly DocuSys PCM, and now an optional module of Merge Healthcare’s anesthesia information management system (AIMS), uses algorithms to score a patient’s risks based on the health history and complexity of surgery.

Patients enter their histories using an automated questionnaire, either in the physicians’ office or by password using their own computer. Once the information is verified by a nurse, the software uses algorithms based on earlier work by the Cleveland Clinic to generate risk scores and recommend lab tests and any further evaluation needed. The questionnaire focuses mainly on pulmonary, diabetic, and cardiac issues. Questions are phrased in laymen’s terms. For example, “Do you have shortness of breath at night that requires sleeping on more than 2 pillows?”

The company is working on enhancements that will allow customers to customize the patient questionnaire and the risk-scoring algorithm, says Bob Schallhorn, vice president of Merge Healthcare.

Patient information gathered through Merge Presurgical can be used to populate Merge’s preanesthesia evaluation module or similar modules in other AIMS, he says.

http://www.merge.com/Solutions/Perioperative/Merge-Presurgical.aspx

My Medical Files
My Medical Files from MMF Systems, Inc, provides a preoperative patient information management service and free web-based preoperative questionnaire service.

Here’s how the process works:
• Physicians submit preop information by fax, MMF’s physician portal, or other electronic medical records.
• Patients submit preop questionnaires by fax or using MMF’s online questionnaire.
• MMF collects, tracks, and reports on all preop patient information.

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For missing information, MMF conducts outreach with physicians’ office staff.
• Authorized hospital and physicians’ office staff access information via the MMF portal.

The latest version, MMF 3.0, can interface with systems using the HL7 protocol, allowing information to flow into an EHR. Physician orders can be entered electronically rather than faxed.

Patients can log in and fill out preop information from their homes or offices.

“This helps to streamline insurance preauthorizations plus reduces delays on the day of surgery,” says Leor Feder, vice president of marketing and sales.

He says MMF is also teaming up with Quest and Labcorp to retrieve lab results electronically. A patient portal that will include preop educational material is in development.

The company says it can provide an entire patient folder within 15 to 30 minutes of receiving a patient’s faxed documents and in a shorter time for electronic documents.

MMF says its service is used by about 70 hospitals and 7,000 surgeons. The patient questionnaire is free. Cost of the preop patient information management service per surgical patient admission includes:

- information centralization and indexing: $4
- tracking and report generation: $2
- compliance and surgeon office outreach: $2.

www.mmf.com

One Medical Passport
One Medical Passport from Medical Web Technologies is intended to connect patients, surgical facilities, and physician offices using web-based software to gather patients’ health histories in advance of a procedure.

When patients are scheduled for surgery, they are instructed by the surgeon’s office to create a Medical Passport, or they automatically receive an e-mail or phone message (HIPAA compliant) encouraging them to create a passport.

Once they log on, patients submit their demographic, insurance, and health history, which are stored in a secure data center. The software tailors questions to the patient and automatically asks follow-up questions for specific conditions. Patients can’t advance until they complete the required questions in each section.

Once complete, the Medical Passport information is immediately available for download by the surgical facility and physician. A personal health record is also created for the patient’s own use.

The service has 3 advantages, notes Stephen Punzak, MD, an anesthesiologist who is the company’s founder and CEO.

First, having a patient’s history well in advance of surgery allows the facility to perform “triage” so the preop clinic sees only patients with conditions that merit an in-person visit. Second, the software automatically screens for patients with issues such as a recent myocardial infarction, increased body mass index, or sleep apnea so these issues can be managed before surgery. Finally, the system provides a uniform set of data to the nursing staff, anesthesia providers, and surgeons.

One Medical Passport can be accessed on the iPad, with plans to extend access to smart phones in 2012.

One Medical Passport is used by about 300 facilities. Pricing is geared to facility size. A typical community hospital can expect to pay about $1,000 to $2,000 a month, whereas an ambulatory surgery center might pay less than $500.

www.onemedicalpassport.com

References


What’s in the OR Manager Toolbox?

Look in the OR Manager Toolbox for sample forms, policies and other helps.

You’ll find the Toolbox at www.ormanager.com.
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Electronic tool aids in navigating preop process

Preop “nurse navigators” aided by an electronic tool are helping a Pennsylvania health system create a more standardized, user-friendly preoperative process for preparing patients for surgery. A cornerstone of the process is evidence-based guidelines for preop evaluation developed by a 50-person task force.

“We wanted to optimize our approach so that when a patient comes to us, we could ensure a consistent standard of care that is evidence based,” says Stephanie McKoin, BSN, MPAHSA, RN, NEA-BC, clinical director of surgical services for York Hospital/WellSpan Health. The York, Pennsylvania-based system has 5 surgical sites, including York Hospital, Gettysburg Hospital, a new surgical-rehab hospital, and 2 ambulatory surgery centers. The total surgical volume is about 33,000 procedures.

The project, underway for 3 to 4 years and led by a task force of the Surgical Care Clinical Effectiveness Team, has involved surgeons, anesthesia providers, intensivists, cardiologists, internal medicine and family practice physicians, senior leaders, the medical director of surgical services, perioperative nursing leaders, and nursing staff.

“We like to have everyone at the table,” notes McKoin, explaining the task force’s large size. “The process was participative and challenging.”

The WellSpan guidelines, finalized in 2010, are based on published recommendations from the American College of Cardiology/American Heart Association and the American Society of Anesthesiologists, among others. (See resources.)

The guidelines were disseminated to the surgeons’ offices and the 2 anesthesiology groups. But the effort didn’t stop there.

Living the guidelines
The leaders knew they needed a plan to ensure the new guidelines became part of daily practice. “We have a great document, but how do we live that and make it user friendly?” says McKoin.

The plan, now in a pilot with a neurosurgeon’s practice, is to have preop assessment nurses act as “navigators” to guide patients and surgeons’ offices through preop preparation.

“Once the decision is made for surgery, our nurses call the patient,” she explains. “In the pilot, they are calling earlier and coordinating the process. It’s more of a concierge experience.”

The nurses are aided by an electronic tool that automates application of the evidence-based guidelines. Once information about the patient and procedure is entered, the tool automatically generates testing and other preop recommendations. When the tool is completed, the nurse can copy the orders to the online order entry system and choose to prepopulate a paper preop testing requisition form (illustrations, p 10).

The tool includes, in addition to testing instructions, tabs with imaging recommendations and references for the testing guidelines, notes Michael Cogliano, MBA, FACHE, administrator of clinical operations at Gettysburg Hospital, who created the tool in Excel.

He is also working on an algorithm to produce recommendations for when a patient needs a medical consultation, also based on the published evidence and consensus by WellSpan’s physicians.

So far, in the pilot with the new process, the number of unnecessary tests has fallen from 4.6 to 0.3 per patient.

Anecdotally, McKoin says, patients are spending 38% less time in the physician’s office because the nurses are guiding patients through the process.

She says the pilot has shown the new process to be a satisfier for patients and the pilot surgeon, and other surgeons are volunteering to join the next phase. The system’s leaders are determining how to provide the necessary resources, including nursing staff, to expand the service.

Automated QI tool
A related spreadsheet that Cogliano developed captures data for quality improvement. This spreadsheet, also with the evidence-based guidelines built in, tracks the tests ordered outside the guidelines and calculates the cost of those tests. The QI tool assists in capturing the cost of providing unneeded services.

“As we try to bend the cost curve and reduce health care expenditures, this is one way of helping to do that,” Cogliano says.

In further refinements, he is discussing with the IT department how the tool could be populated with information from the elec-

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Preoperative testing tool

The WellSpan tool consists of 3 data entry sections and 1 orders output section. These are excerpts for illustration.

First section

The first section provides for entry of demographic information. This is optional but helpful if the end user wishes to save the document as part of the office record, drive the completion of an order entry form, or have the patient’s body mass index (BMI) automatically calculated and easily accessible.

Second section

The second section allows the end-user to select the surgical procedure being scheduled by placing an “x” next to the procedure. The designation of low, intermediate, or high risk is integral to the testing algorithm and contributes to the determination of orderable tests. Shown is an example of cardiothoracic surgical procedures.

Third section

The third section allows the end-user to select from a variety of patient conditions and risk factors. Again, the user indicates the selection with an “x,” and these risk factors drive the final determination of tests to be ordered. Two section examples are shown.

Orders output section

The orders output section is based on the selections made in the previous sections. In the example, for this patient, the evidence-based orderables would be an electrocardiogram, chest x-ray, WCBC, and BUN/creatinine/electrolytes. No further preop testing is required unless the patient’s physician thinks more are needed based on presenting signs and symptoms.

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GAO: Transparency lacking in implant prices

P

rices hospitals pay for implants like automated implantable cardioverter defibrillators (AICDs) vary widely.

Prices for one model varied by as much as $8,723. The difference between the lowest and highest prices on specific models ranged from $6,844 to $8,723 (including rebates) for 31 hospitals studied by the Government Accountability Office (GAO).

Cardiac and orthopedic implants accounted for nearly all of Medicare’s implant-related expenses.

The report was requested by Senator Max Baucus, chair of the Senate Finance Committee.

Confidentiality clauses

The GAO notes that hospitals have difficulty comparing prices that might enable them to get better deals because many manufacturers require them to sign confidentiality clauses that restrict them from revealing the prices they pay.

Physician preferences can also affect implant prices, GAO notes, because they limit hospitals’ abilities to get volume discounts. Other factors are vendor competition and a hospital’s market share.

Devices studied included hip and knee implants, drug-eluting coronary stents, AICDs, and cardiac resynchronization therapy defibrillators.

The GAO said it was more difficult to compare prices on orthopedic implants because of the variation in device configurations.

It gave some examples. One hospital spent about $4,500 for a specific hip construct in 2010, while another paid about $8,000 for the same construct, or 78% more.

The GAO noted that it had difficulty getting complete data on implant costs for many of the hospitals because they did not provide enough detail on costs and did not all have access to rebate information.

Impact on Medicare costs

The implant market has implications for containing Medicare costs, the GAO says. Policymakers are concerned that the lack of price transparency inhibits competition, leading to higher spending on implants and thus higher costs for Medicare overall.

Medicare spent over $19 billion for procedures involving implants in 2009.

Spending on implants rose from $16.1 billion to $19.8 billion from 2004 through 2009, an increase of 4.3% a year, about equal to the increase for other procedures.

The report released in February 2011 is available at www.gao.gov/assets/590/587688.pdf

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tronic health record. With the finance department, he is developing a business plan for providing the automated spreadsheet to other health care organizations.

McKoin sees the new preop process, which has been a WellSpan priority, as one way to prepare for bundled reimbursement and for more patients who are insured under government payment rates.

“It’s a complex process, and it’s nice if someone helps (the physicians) optimize it,” she says. “We want to make this an exceptional experience, so why would they want to go anywhere else but WellSpan for their surgical care?” –Pat Patterson

Resources


Four years ago, Duke Health’s Preop Screening Unit was facing challenges. The unit had a full schedule, some appointments were double-booked, and some patients had long wait times. There was no system for separating healthy patients from complex ones. Meanwhile, surgery centers were asking the unit to provide screening for all of their patients.

Duke, based in Durham, North Carolina, had tried a “fast track” process for healthy patients, but that didn’t solve the problem.

**Special focus: Preop preparation**

“We were still seeing healthy 18- to 40-year-olds, including healthy people with sports injuries, along with heart surgery patients and patients having major abdominal or cancer surgery,” says Anthony Basil, RN, clinical nurse IV and charge nurse for the unit.

**Phone screening protocol**

The answer is a nurse phone screening protocol guided by criteria that identify healthy ASA 1 and 2 patients having low- to moderate-risk surgery (referring to American Society of Anesthesiologists’ physical status).

ASA 3 and 4 patients having more complex surgery are screened in person by a physician assistant (PA) or nurse practitioner (NP), with oversight by a medical director.

The only surgical patients not seen by the unit in this 924-bed academic medical center are those coming in through the emergency department or already in-house. The annual surgical volume is about 30,500.

**Patient satisfaction**

The unit screens 110 to 130 patients a day, with about 30 to 45 of those assessed by a nurse using the phone screening guidelines. In December 2011, 3 to 4 RNs screened about 800 patients by phone. The Preop Screening Unit is staffed by 11 RNs (10.7 FTEs), all of whom rotate through phone screening. On a typical day, 3.5 RNs perform phone screening.

The screening includes, in addition to the patient’s health history, patient teaching and medication reconciliation.

Patients are just as satisfied with the phone screening as with a clinic visit, Duke’s data shows. A year-long project is under way to collect data on the impact on OR delays and cancellations.

So far, says Basil, there have been no physician complaints about cancellations due to the phone screening process. He notes that the preop process meets all Joint Commission requirements.

**Key documents**

Two key documents guide the phone screening protocol:

**Request for preop phone screening form**

The front of the form lists basic information about the patient, including contact information. On the back are criteria to determine which patients are eligible for the protocol. The criteria were developed in consultation with Duke’s anesthesiologists and surgeons.

Preop screening unit

When the unit receives the information, an appointment is scheduled in the information system, which generates the preop documentation forms. A preop nurse assembles a 3-ring binder for the patient, which is filed by surgery date.

**Phone screening**

One to two weeks before surgery, a preop nurse calls the patient to conduct the phone screening. On average, screenings take 48.8 minutes, according to 2010 data. This includes:

- preparation: 12.7 minutes
- interviewing: 19.2 minutes
- charting: 16.9 minutes.

Screening patients by phone rather than face-to-face still takes quite a bit of time, says Basil, because teaching and medication reconciliation take about as much time on the phone as in person.

The assessment is entered in
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Preop screening activities
Activities performed by Duke Health’s Preop Screen Unit:
- Provide history and physical.
- Perform medication reconciliation.
- Determine what optimization is needed and initiate it.
- Obtain lab work, electrocardiogram, x-ray, etc., as needed prior to surgery.
- Obtain anesthesia consent.
- Consolidate all preop paperwork.
- Provide preop teaching by an RN.

The process is easier for the patient.

“We call this a ‘conversion,’ and it usually takes less time than a full assessment,” Basil notes.

Lessons learned
Getting buy-in was critical, particularly from surgeons’ nursing staffs, says Basil.

The surgeons’ staffs didn’t warm to the phone screening protocol initially “because we weren’t saving them any time,” Basil explains.

“It was easier for the nurses to call and make a preop clinic appointment than to make sure all of the paperwork was there, and the patient met the criteria.”

One way to overcome this hurdle was to explain to the nurses, “I know it’s a little more work for you, but it’s easier for the patient.”

A second challenge was convincing senior leaders that without additional personnel, the unit couldn’t screen more patients, even using the phone protocol.

The data, showing that one nurse could complete about 10 phone screenings a day, demonstrated that. Once the message was heard and staff added, phone screenings, which had been at 100 to 200 a month, accelerated, hitting 800 in December 2011.

With the phone-screening protocol, lower-risk patients can be screened in an abbreviated manner without missing patients who have significant health issues, Duke researchers note. The protocol ensures all patients receive education and produces a consistent H&P similar to the one conducting during an in-person assessment. That has streamlined the process while ensuring that all patients receive the right level of preop preparation.

—Pat Patterson

Duke’s criteria and preoperative screening questionnaire are in the OR Manager Toolbox at www.ormanager.com

References


Gastric bypass better for weight loss
Roux-en-Y gastric bypass is associated with more weight loss than gastric banding, finds a study published online January 16, 2012. Of 442 matched patients, those having bypass lost more weight and kept it off significantly better after 6 years than those having banding.

Though bypass patients had a higher rate of complications immediately after surgery (17% vs 5%), in the long term, there were more complications (42% vs 19%) and more follow-up operations (27% vs 13%) after banding.

Capital planning 101

Typically, capital purchases are those higher than a dollar threshold set by the organization. Crompton recommends planning for 3 to 5 years in 3 categories:

- development and support of new programs and services such as construction or a robot for a new surgical specialty
- scheduled maintenance of clinical infrastructure such as sterilizers and flooring
- emergency replacement of equipment such as C-arms and endoscopy systems.

“Develop a timeline of what will need to be replaced when,” she says. Most planning is done annually with some ad hoc planning for unexpected situations such as equipment breakdown.

“We try to link the priorities of our strategic plan of the hospital to the departments,” says Crompton. “One priority is to engage physicians as partners. In the past, some equipment would just show up; no one would know it was coming.”

She advocates transparency in the process to encourage physician partnership.

“We walk our talk of being a transparent organization that will show the inner workings of how decisions are made.”

Avigne agrees, saying, “Our CEO believes in full disclosure of the process.”

Team spirit

“You have to engage all players in the process,” says Crompton. That doesn’t mean everyone meets in the same room but refers to having stakeholders participate at key steps in the process.

Crompton serves as the team’s leader, and members include the medical director; surgeons; anesthesiologists; department director and managers; service line coordinators; biomedical services; decision support; and representatives from facilities, engineering, and information technology (IT) departments. Crompton says the business manager coordinates the process.

Shands uses a team approach, too. In January, Avigne asks the surgical department chairs what they think will be needed for the following fiscal year (July to June). The outpatient business manager helps with the process, and charge nurses, clinical leaders, and other staff participate as well.

Setting priorities

Priorities are negotiated among surgeons, nurses, and management, Crompton says. Final approval comes from the facilitywide clinical capital committee, chaired by a physician, or from the board, depending on the size of the request.

At Shands, “We tally all the requests and then prioritize them based on safety, quality, strategic initiatives, and replacement items,” Avigne says.

“When you are asked to prioritize, communicate, communicate, communicate. You have to keep repeating your message and validating the conversation. Keep emails for documentation.” Examples of key information to communicate to surgeons include:

- the deadline for requests
- request status
- decision on request
- follow-up of conversations for which you may need evidence later, such as a surgeon’s commitment to higher-volume projections linked to a capital purchase.

Avigne sends the recommendations to the chief operating officer and vice president of finance, who determine if the capital request will be approved.

Avigne, the business manager, and the surgeon stakeholder for the project under consideration present the ROI [return on investment] analysis to the chief operating officer.

Timothy Flynn, MD, a vascular surgeon who is chief of the staff, provides input. Avigne adds that surgeons have to be able to “present their case” for preferences, but standardization is important as well.
OR economics

Sample business case outline
Sections to include in a business case for a capital purchase:

Executive summary
Project description and analysis:
■ Overview (about one paragraph) explaining the purpose of the proposal, reason for request, and dollar amount.
■ Answer questions such as: What is the current situation and problem? Why is the status quo unacceptable? What other options were considered? How and why was this solution selected?

Business and operations impact
■ Answer questions such as: How will this solution resolve the problem? How will it bring value to the department, hospital, and system?

Strategic alignment
■ Market assessment, including what the industry is doing about the same problem.

Project risk assessment
Marketing and payer contracting plan
■ Implementation plan and critical success factors, including timeline.

Financial plan and return on investment analysis
■ Should include proposed investment, revenue and volume predictions, potential pitfalls and weaknesses, and source of funding.

Project sponsor(s)
■ Examples: Information technology, facilities management, nursing, or medical staff.

Conclusions and recommendations
■ Relevant standards and recommendations
■ Other key data such as reimbursement, cost for repair and maintenance, and cost savings, if applicable.

—Courtesy of Memorial Care Health System, Long Beach, California.

Decision tools
Crompton recommends using tools so decisions are driven by data and need rather than “wants.”

One tool is the request for proposal (RFP). Managing the RFP process requires focus, she says.
“The quote needs to reflect what you asked for, not what the company thinks you should buy.”
Ensure quotes are valid as long as possible (at least 120 days to 24 months) because the approval process takes time. Trials are conducted after the RFPs have been analyzed.

Avigne says the value of an RFP is that, “We get companies to compete with each other.” Her business manager also checks national prices with MEMdata, a company that provides pricing data. “It’s a bargaining tool.”

Like Avigne, Crompton uses an ROI analysis that becomes part of the written business case, a succinct summary of the project. Once the project is approved, ROIs must be updated quarterly or semi-annually to track progress.
“You have to understand the expense side, so you remember to build in costs for disposables (into the ROI),” says Avigne. “The ROI helps you focus on clinical standards of care.”

A summary request form is used to list all the requests from each department. “On that list we prioritize what’s most important,” says Crompton. She works with the medical director and the department director to set priorities.
“We know what service lines we need to invest in,” she adds. A single surgeon can’t drive the purchase of a piece of equipment; the department has to agree.
Crompton keeps a spreadsheet of each specialty’s requests, including the percentage of total funds allotted to each specialty.
“I balance it,” she says. “You have to share the wealth. It’s very easy for ortho and neuro to consume all the capital spending, and nothing is left for the other specialties.’’

Making the pitch
Crompton has the physicians present capital requests to the approval committee or board whenever possible.
“I work with my unit managers to identify which surgeons have the greatest passion for the capital purchase.” Then she prepares the physician for potential questions and how to deliver the presentation for maximum effect.
“When you are up against the committee, you have to be able to give details,” she adds. For example, a sterilizer was installed in 1975, formal recommendation for changing it came in 2009, and this is the replacement plan.
Crompton recommends having a Plan B that identifies which

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OR economics

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items requested can be reduced in quantity, postponed, or sacrificed.

Open the wallet
Once the purchase has been approved, it’s important to set timelines in order of priority. If more trials are needed, they are conducted at this time.

“You need to plan in advance for needed construction or installation,” says Crompton. At this stage, the business manager coordinates the process.

Crompton also keeps a capital tracker spreadsheet for each year that includes when the item was ordered, shipped, and received. She uses another spreadsheet to track disposition of assets that are removed from the OR.

Words of advice
Avigne emphasizes the need to “know what surgeons are thinking.” Use memos, emails, and meetings to keep connected. “I start with the department chair but also send a letter or email to all of the surgeons and ask them to funnel their requests through the department chair.”

Crompton sums up 3 tips for a smooth capital purchasing process:
- Do your homework.
- Prioritize purchases to the department, not the surgeon.
- Make the process transparent.

—Cynthia Saver, MS, RN

Cynthia Saver, a freelance writer, is president, CLS Development, Inc, Columbia, Maryland.

Reference

VTE, PE, short stay complications after total joint replacements

Preventing venous thromboembolism (VTE) has been a major focus of the Surgical Care Improvement Project (SCIP).

Two new studies look at VTE prevention for patients having joint replacement.

VTE in total joint patients receiving prophylaxis
About 1 in 100 patients having knee arthroplasty and 1 in 200 having hip arthroplasty will develop venous thromboembolism (VTE) before discharge, despite receiving recommended prophylaxis, finds a new meta-analysis of 44,844 patients in 47 studies.

The results could be used as a benchmark to evaluate patient safety indicators from routinely collected data, the authors note. The findings also have significance for considering the risks and benefits of arthroplasty, they add.


When does PE happen after a total hip replacement?
Patients often receive anticoagulation to prevent pulmonary embolism (PE) for many weeks after a total joint replacement. The risk is elevated for up to 90 days, studies have shown. But anticoagulation carries the risk of bleeding and an associated implant infection.

Guidelines aren’t clear about how long to continue anticoagulation.

In a new study, researchers reviewed records of 25,600 consecutive patients who had primary joint replacement to see when PE actually occurred. In the 286 patients diagnosed with PE, the median was 2 days after surgery. In all, 89% of PE occurred within the first 7 days postoperatively.

All patients were started on warfarin the evening after surgery. The average INR (international normalized ratio) at the time of diagnosis was 1.4.

Cancer was linked to an earlier occurrence of PE, while patients with chronic obstructive pulmonary disease developed PE later.

The authors conclude that the risk of PE appears to be highest during the first week after total joint replacement. After the first week, the frequency appears low.

The study led by Javad Parvizi, MD, FRCS, of Thomas Jefferson University was presented at the 2012 American Academy of Orthopaedic Surgeons meeting February 7 to 11 in San Francisco.

Short stay after total knee linked to higher risks
Patients who had a total knee replacement with short hospital stays of 2 days or less had a higher revision rate and mortality risk than patients who stayed the traditional 3 to 4 days, though costs were much lower, in a new study.

Patients in the hospital for 5 days or more after surgery had the highest costs and risks for mortality, revision, and many of the other complications studied.

The study compared data for 108,000 Medicare patients who had total knee surgery with stays of 1, 2, 3 to 4, or 5-plus days as well as those who had outpatient procedures.

At 1 year, the outpatient group had less pain and stiffness compared to the traditional-stay group but had higher 90-day infection, dislocation, readmission, and mortality risks.

Results were compared at 90 days, 1 year, and 2 years after surgery.

The study led by Scott T. Lovald, PhD, MBA, was presented at the 2012 American Academy of Orthopaedic Surgeons meeting in San Francisco.
Capnography—is it the standard of care for patients having moderate sedation? Should capnographic monitoring be added for procedures performed under moderate sedation in areas like the preop holding area, GI endoscopy unit, and cath lab?

The issue is generating discussion following an update in the American Society of Anesthesiologists (ASA) Standards for Basic Anesthetic Monitoring, which took effect July 1, 2011. The standards call for continuous monitoring of exhaled CO₂ (ie, capnography) for moderate sedation (sidebar).

The update is a change from the 2005 standard, which said that during regional anesthesia and monitored anesthesia care, the adequacy of ventilation shall be evaluated by continual observation of clinical signs and/or monitoring for exhaled carbon dioxide.

The changes stand to have far-reaching effects.

Managers in endoscopy units, cath labs, radiology departments, emergency departments, and other treatment areas outside the OR are considering how to incorporate the changes into policies and procedures, staff training, nursing documentation, and budgeting for equipment and supplies.

Quality, safety the goals

“Our ultimate goal in updating the standards was to ensure quality patient care and patient safety,” Donald E. Martin, MD, a member of the ASA committee that wrote the update, told OR Manager.

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**Standards for Basic Anesthetic Monitoring**

Effective July 1, 2011, these standards from the American Society of Anesthesiologists apply to all general anesthetics, regional anesthetics, and monitored anesthesia care.

**Standard II**

During all anesthetics, the patient’s oxygenation, ventilation, circulation, and temperature shall be continually evaluated.

**Ventilation 3.1 Objective:**

To ensure adequate ventilation of the patient during all anesthetics.

**3.2 Methods:**

3.2.4 During moderate or deep sedation, the adequacy of ventilation shall be evaluated by continual observation of qualitative clinical signs and monitoring for the presence of exhaled carbon dioxide unless precluded or invalidated by the nature of the patient, procedure, or equipment.

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**We see capnography as imperative.**

when patients had disordered breathing.”

Heard says this experience prompted her to initiate its use in North Shore’s 7 endoscopy rooms.

When the new ASA standard was issued, Heard enlisted the chief of anesthesia, who was already a proponent, as a champion. Another champion, the chief of medicine, is helping to expand capnography to areas that use patient-controlled analgesia (PCA) as well as to the emergency department and gastroenterology.

“Our main challenges are financial,” says Heard, referring to the cost of implementing the standard. She also notes that a bad patient outcome that capnography could have prevented would also be expensive.

**Not a ‘magic pill’**

“Capnography is not a magic pill,” says Heard. “You can’t say that because you use capnography, you are going to save lives. What it does is to tell you when a patient’s ventilation changes before any other monitoring device.”

For example, if a patient’s oxygen saturation drops to 95, 92, and 88, a pulse oximeter alerts the nurse to intervene by repositioning the airway. In contrast, the capnometer alerts the nurse of a problem with the patient’s ventilation before the oxygen saturation starts dropping, allowing the nurse to intervene and prevent a drop in oxygen saturation.

Capnography adds information.

“We’re not saying, don’t use pulse oximetry and just use capnography. We’re saying that used together they result in safer patient care,” Heard says.

**VA weighs capnography**

The Department of Veterans Affairs (VA) is considering the new ASA standard as it revises its moderate sedation directive, “but we are not sure which way they will go,” says Cindy Taylor, MSA, BSN, RN, CGRN, nurse manager for GI endoscopy/bronchoscopy at Hunter Holmes McGuire VA Medical Center, Richmond, Virginia. The VA system presently does not require capnography for moderate sedation, and Taylor questions whether the VA will update the directive because of the lack of outcomes data and the cost of new equipment.

“Outcomes data is the first thing the VA may look at,” says Taylor, “and right now outcomes data is not there to substantiate the cost of the capnography.”

But Dr Martin notes that a randomized controlled trial is unlikely to be conducted. He says the type of injury from hyperventilation and oversedation described in the ASA closed claims data is rare, making it hard for researchers to conduct a study with enough patients to show a difference in outcomes.

“If facilities are looking for an outcomes study with hundreds of thousands of patients that separates out the benefits from capnography in addition to pulse oximetry in moderate sedation patients, it is true they won’t find one,” he says.

He adds that anesthesiologists would hesitate to participate in a randomized trial comparing patients with monitoring to those without monitoring because of the potential risk to unmonitored patients, making it unlikely such a study will be done.
Patient safety

**Studies: Capnography use during moderate sedation**

**Study in children**
In a study analyzing 163 children having GI endoscopy procedures with moderate sedation, capnography improved the standard of care by allowing early detection of respiratory compromise.


**Meta-analyses**
A meta-analysis concluded that during procedural analgesia and anesthesia, respiratory depression was 28 times more likely to be detected when patients were monitored by capnography rather than by traditional methods (pulse oximetry, visual inspection).


A meta-analysis of clinical studies concluded that during procedural sedation and analgesia, cases of respiratory depression were 17.6 times more likely to be detected in cases monitored by capnography than in cases not monitored by capnography.


**Early warning sign**
In 247 patients having elective endoscopic retrograde cholangiopancreatography and endoscopic ultrasonography under moderate sedation, researchers found capnographic monitoring acts as an early warning system, reducing the frequency of hypoxemia, severe hypoxemia, and apnea.


**Randomized trial**
In a randomized controlled trial of 132 patients receiving propofol sedation in the emergency department, adding capnography to standard monitoring (pulse oximetry, cardiac function, and blood pressure) resulted in a decrease in hypoxia and identified all hypoxic events before onset.


**GI endoscopy guideline**
The American Society for Gastrointestinal Endoscopy (ASGE) in its 2008 guideline on Sedation and Anesthesia in GI Endoscopy states: “Extended monitoring techniques may provide sensitive measures of a patient’s ventilatory function (capnography) and level of sedation (BIS index monitoring); however, there is insufficient evidence in the literature to support the routine use of extended monitoring devices during moderate sedation.”

Taylor says practitioners may interpret this to mean that monitoring ventilation with a pulse oximeter and signs and symptoms is sufficient.

**Ahead of the curve**
Phoebe Putney Memorial Hospital in Albany, Georgia, began implementing capnographic monitoring for moderate/deep sedation and for patients with postoperative PCA pumps over a year ago. Many new monitors were purchased.

“The ASA standard will begin pushing other institutions to add capnography for moderate sedation patients and others,” says Carol Wright, BSN, RN, CNOR, director of the OR, SCP, anesthesia, and perfusion. “We were ahead of the curve.”

Capnographic monitoring is now standard for every patient at Phoebe Putney who receives procedural sedation no matter where that occurs.

Wright says she and her colleagues struggled with how to implement capnography in the preoperative holding area, where regional anesthetic blocks are performed and lines inserted, because they also administer medications for anxiolysis. To make it easier for the preop nurses, the decision was made that any patient having any procedure in the preoperative holding area would be monitored.

The biggest pushback was from surgeons and proceduralists, who believed it was the anesthesia provider’s responsibility to assess a patient’s airway, not theirs. Wright says they learned it was their responsibility when no anesthesiologist was present, and this was the new standard of care.

Capnography is invaluable in areas that don’t have anesthesia coverage, Wright says. “We see capnography as imperative for patient safety. It alerts us to reduced ventilation before we have a larger problem on our hands.”

**CMS requirement coming?**
Jennifer Haines, BSN, business manager for surgical services at Chester County Hospital and Health System in West Chester, Pennsylvania, calls the new ASA standard a “good idea that adds an additional level of safety for patients.” She is in the process of acquiring new monitors for the en-

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Patient safety

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doscopy unit and cath lab. “This is a big deal for all of us. We are going to have to do a lot of education and buy a lot of new expensive equipment. We are figuring out what we need to be ready because we expect CMS to require capnography for moderate sedation in the next year or so,” she says, referring to the Centers for Medicare and Medicaid Services.

John R. Rosing, MHA, FACHE, who consults with hospitals on Joint Commission and CMS matters, says the Joint Commission told him in September 2011 that it is studying the capnography issue.

“I can’t predict what CMS or the Joint Commission is going to do about the ASA standard,” he says. “The best we can say right now is that we don’t know what CMS is thinking because its interpretive guidelines regard moderate sedation as analgesia, not anesthesia. The Joint Commission, on the other hand, regards moderate sedation to be along the continuum of anesthesia and thus may be leaning to require [capnography].” Rosing is vice president and principal, Patton Healthcare Consulting.

Haines says she believes many institutions will wait for CMS to adopt a standard before getting on board. She says many are interpreting a phrase in the ASA standard that says, “unless precluded or invalidated by the nature of the patient, procedure, or equipment,” to mean, “If you don’t have the equipment, you don’t have to do it.” In other words, they see the standard as a recommendation and not a requirement.

Educating clinicians

When capnography use is expanded, clinicians have to be trained to interpret the capnogram wave forms and the kinds of waves that indicate apnea or hypoxia. Nurses must document the patient’s capnographic readings on the procedural record. In addition to writing a single number from the capnometer, Heard recommends adding an end-tidal CO2 column on the patient flow sheet to allow the nurse to indicate a normal waveform. If there is an abnormality in the capnogram, the nurse should describe it in the patient note with the intervention performed (eg, repositioned airway, suctioned oropharynx) and the result.

“That is the best way to show not only that the nurse was monitoring the capnogram but that when a change was recognized, it was documented,” she says. —Judith M. Mathias, MA, RN

References


Have an idea?

OR Manager welcomes your ideas and contributions for articles. Contact Pat Patterson, editor, at ppatterson@accessintel.com.
Sterile reprocessing: Rely on the experts to aid OR

Perioperative nurses’ roles have expanded to the point where it is difficult for them to be experts in all areas, especially the reprocessing of complex medical devices. And with reimbursement pressures, OR clinicians need to focus on patient care and physician satisfaction.

So I challenge each operating room to recognize the sterile processing department (SPD) as the experts in reprocessing reusable medical devices. Here are a few ways you can support SPD.

Preclean instruments
SPD is where cleaning, high-level disinfection, and sterilization are performed. But the SPD staff needs the OR to do its part by precleaning instruments as soon as possible and keeping them moist by using a commercially available presoak product (eg, enzymatic) and/or a towel moistened with water (but not saline) before transferring them to SPD.

If instruments are not kept moist, blood will dry on them within 30 minutes or less. Blood and body fluids can cause pitting, and dried blood is hard to remove, adding additional processing time, which may delay the return of instruments to the OR, affecting OR workflow and customer service.

Rick Schultz, CEO of Spectrum Surgical Instruments Corporation, said at a seminar in October 2011 that it is the OR’s responsibility to take care of the instruments, but it is SPD’s responsibility to clean and sterilize them. The OR needs to preclean instruments to make cleaning in SPD easier. This will protect patients and is the OR’s responsibility.

Immediate-use steam sterilization
Immediate-use steam sterilization is a hot topic as a result of the Joint Commission’s emphasis in this area and the multi-society position paper titled Immediate-Use Steam Sterilization (IUSS).

Joint Commission surveyors have been trained using the Association for the Advancement of Medical Instrumentation (AAMI) comprehensive steam sterilization standard and are citing more hospitals for failure to correctly perform cleaning, disinfection, and sterilization. Citations have gone up for high-level disinfection and sterilization since this training in early 2010. The Joint Commission is also citing facilities for not protecting instruments during transport or for routinely using IUSS.

Using a consistent process
As stated in the multi-society position paper and as expected by the Joint Commission, instruments should be cleaned, packaged, and sterilized the same way whether reprocessed in the OR or in SPD. That means if a complex instrument set’s written instructions for use (IFUs) require 40 minutes to manually clean, including three 10-minute cycles in the ultrasonic cleaner, rinsing with purified water, and sterilizing in the original containment device for 10 minutes at 270°F to 275°F in a dynamic-air-removal steam sterilizer, then this process needs to be followed whether the instruments are processed in the OR or in SPD.

Does your OR have the proper setup to follow the IFUs? Are the personnel oriented, trained, competent, and certified, and do they have the critical thinking skills to perform these tasks correctly?

Reducing use of IUSS
The HealthEast Care System in St Paul, Minnesota, has dramatically changed the use of IUSS to an average of less than one load a day at its hospitals and no loads for a typical month in its ambulatory surgery center by establishing collaborative OR and SPD teams who developed an improvement plan. The teams developed stringent policies for loaner instruments to ensure they arrive in time to be processed correctly (not using IUSS) based on professional recommendations and practices, Joint Commission statements, and best practices.

The OR policies defer to sterile processing policies for all reusable device cleaning, disinfection, and sterilization. Some changes to decrease IUSS included:
• increasing individual instrument inventory
• changing the components of instrument sets
• creating more instrument sets
• changing sterilization methods that were an option in the IFU.

Planning, communication, and processes also improved. But most important, the OR recognized

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SPD as the processing experts. In the next phase, the goal is to reduce or eliminate all sterilization performed in the OR setting.

Hospitals are eliminating IUSS in the OR except in emergency situations for single dropped instruments—its original purpose—because cleaning and sterilization process are so complex that sterile processing experts are needed to focus on these tasks.

**Competency in sterile processing**

For all of these reasons, it is time for the OR to pass the baton completely to the sterile processing experts. Their departments are better designed and equipped for this purpose than the OR, and their employees are trained and should be certified in cleaning, packaging, and sterilizing reusable medical devices.

The department should be managed by a certified expert and change leader who keeps up with recommended practices. If the department leader or employees are not certified, that should be a top priority, with the OR supporting that endeavor.

Certification helps develop a basic level of understanding and knowledge, consistency and standardization of performance, confidence, authority, and a sense of professionalism. Certification is offered through the Certification Board for Sterile Processing and Distribution, Inc (www.sterileprocessing.org) and the International Association of Healthcare Central Service Materiel Management (www.iahcsmm.org). So far, New Jersey is the only state to require certification of central service managers, supervisors, and technicians. Some organizations have tied certification with pay incentives, and others have made certification mandatory to work in the department.

**Justifying higher salaries**

Nancy Chobin, assistant vice president, sterile processing services, Barnabas Health, West Orange, New Jersey, was able to justify to management the cost of increasing salaries across the board in sterile processing to make the salaries commensurate with the level of responsibilities.

She says she was able to demonstrate that it is less expensive to provide realistic salaries and a career ladder and to retain employees than it was to replace and train new employees. Upgrading job descriptions to reflect the complexity of today’s sterile processing also helped to justify an improved pay scale.

**Funding certification**

Sam del Toro, manager of the sterile processing department at Hoag Hospital in Newport Beach, California, and the hospital’s administration decided to fund the certification of 10 to 15 employees per year for 3 years (which would cover all employees) to ensure they are Joint Commission survey ready and know the “why” behind tasks, not just how to perform them.

The department has a binding contract that states that employees must commit to work in the department for 1 year after they achieve certification or reimburse the facility for the cost of certification to ensure that the investment has a measure of return. A benefit is a reduced turnover rate.

I challenge ORs to recognize SPD as the experts in reprocessing reusable medical devices and depend on them to provide the OR with the equipment they need in a timely manner. Use your influence to support them so they can do the job they know best and so ORs can do the job they know best. This partnership and support can lead to a higher level of care and better patient outcomes.

—Martha Young, MS, CSPDT President, Martha L. Young, LLC providing SAVVY Sterilization Solutions for Healthcare, Woodbury, Minnesota

**References**


The impact of health care reform on ambulatory surgery centers (ASC)—like that on health care in general—is still uncertain. But plenty of other factors are at work that are likely to play a role in shaping the industry’s future.

While the dramatic growth of the 1990s has largely abated, a new study indicates ASCs will continue to consolidate with hospitals or larger chains, that gastrointestinal and orthopedic procedures will continue to provide the largest portion of the industry’s revenue, and that cost savings will take on a higher priority.

A look at macro factors

The study, by VMG Health in Dallas, released in November 2011, is part of the firm’s annual Intellimarker series of ASC financial analyses. VMG collected data from 2,010 operations at 240 multi-specialty ASCs nationwide.

Although this is VMG’s first study following passage of health care reform, it is too early to find evidence of any effects on ASCs of the Patient Protection and Affordable Care Act in this study, according to VMG senior manager and lead researcher Aaron Murski. Instead, he says, changes in the past year resulted “from macro factors affecting the ASC industry.” These include a trend toward increased efficiency due to lack of investment capital or volume increases that would bring in more revenue.

“There are not enough qualified physician investors to go around,” Murski notes. “You can only do so much to improve revenue, so ASCs are saying, ‘If we’re not a growth industry, we have to be more cost conscious.’”

Another restraint on growth may be the limits of technology. While Medicare continues to add procedures to the list of those it will reimburse, there tend to be variants in currently approved categories rather than new categories moving from inpatient status. (One exception is spine surgery, once thought too complex for outpatient status, now increasingly common.)

“Every year more procedures are okayed,” Murski says, “and this will continue to some extent over time, but I don’t think there will be any windfall where a whole class of procedures will be allowed as outpatient.”

Even new surgical techniques take time to achieve acceptance among physicians, he adds.

Still, he adds, “ASCs should have a place at the table” whenever the legal challenges surrounding health care reform are ironed out because they are among the lowest cost providers.

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Applying the data

The Intellimarker study provides aggregate and regional financial data as well as breakdowns by specialty and annual case volume. VMG recommends that an ASC look at the benchmarks for each category that applies but also to remember that “all centers are unique.”

The study’s national averages provide a picture of the state of the industry during the 2009-2010 study period. Researchers estimate the number of US ASCs at 5,900, with about 22% owned by multi-facility chains. The largest chains:

- AmSurg: 208 centers
- United Surgical Partners International: 191 centers
- Surgical Care Affiliates: 145 centers
- HCA: 98 centers
- Nueterra: 90 centers.

Murski does not anticipate much further consolidation because of the local nature of health care, which tends to counteract the pull of large organizations. But as the data show, larger centers tend to be more financially healthy and thus more attractive to buyers, yet better able to fend them off.

Weighing specialties

Even for the multi-specialty subgroup of ASCs, procedures are unequally distributed.

For the group as a whole, GI/endoscopy procedures account for 29% of total case volume. Next are ophthalmology and orthopedics, with 17% each. Pain management accounts for 14%, and the other specialties for less than 10% each.

Some specialties are more profitable than others, based on the revenue per case. The study measured both gross charges and net revenue per case and found orthopedics topped the list, with the highest gross charge of $9,398, as well as the highest net income of $2,585. The difference, $6,813, represents average contracted discounts or regulated reimbursement levels (chart).

As Murski notes, there is a wide variation among specialties, and the highest gross charges do not always translate into high net revenue. Much of the disparity is due to reimbursement, either from Medicare or contracted commercial insurance discounts.

Because reimbursement is difficult to change, ASCs must focus on efficiency through scheduling, productivity, and supply cost control, “or profits can disappear quickly.”

The productive few

The average case volume per ASC is 4,258 per year and 17 per day. At all facilities, the top 2 physicians perform nearly a third of all procedures. For smaller centers with 1 or 2 ORs, that jumps to 39%; it is less at larger centers.

Regardless of size, for all multi-specialty ASCs, the mean gross revenue in the study period was $29,979,000, and the mean net revenue, after adjustments, was $7,736,000. There was a wide variance, however, as shown in the chart on p 25.
Accounts receivable

As a national average, ASCs had accounts receivable outstanding for 36 days. The range was 28 days (25th percentile) to 51 days (90th percentile). While 25% of income on average came from Medicare, 58% was from commercial insurers.

ASC assets

ASCs with the highest case volume also had the greatest average assets, worth $1.6 million for those performing 6,000 or more cases annually. Those with the lowest volume, less than 3,000 cases, had assets averaging $833,000.

The lower-volume ASCs also had more long-term debt as a portion of their total liabilities—$212,000 out of $501,000. The highest volume group had long-term debt averaging $231,000 out of $573,000.

Highest expenses

The highest expense categories were for staffing, primarily nurses and administrators, and for medial-surgical supplies. The average staff, by profession, included 1 administrator, 5.4 technical staff, 8.5 administrative staff, and 13.3 nurses. (Average salaries are in the chart.)

Using the benchmarks

These and other benchmarks are national averages. Regional sections of the report provide more detailed local findings.

Though variances point to areas in which to seek improvement, they do not provide the reasons why a particular facility may look different from its peers.

“There may be perfectly valid reasons for variances from the benchmark, and it does not necessarily signal underperformance in that area,” the researchers note.

In addition to providing benchmarks, the study allows readers to step back and understand trends and conditions in the industry. “It always helps to understand your position in your industry,” Murski advises. “Forward-thinking administrators need to focus on the local market but also on the wider industry. It helps to pick your head up now and then.”

—Paula DeJohn

The 2011 Intellimarker ASC Benchmarking Study is available from VMG Health at www.vmghealth.com...
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Tracking TASS: Registry eyes an elusive target

Cataract surgery, almost exclusively outpatient, can have a serious complication if instruments retain a chemical residue after cleaning. It is known as TASS, for toxic anterior segment syndrome.

Ophthalmologists say it is rare, but there are no consistent data to indicate when, where, and how often TASS occurs.

The Food and Drug Administration (FDA) hopes to change that and perhaps develop protocols that will lead to elimination of TASS with a reporting and tracking program.

A pilot test was due to begin in February 2012, to last for 3 months, and to lead to development of a permanent physician registry to record TASS occurrences.

New detection methods

The FDA estimates 3 million cataract surgeries take place each year and expects that number to increase as the population ages. The American Academy of Ophthalmology (AAO), which is collaborating on the project, estimates 1.8 million of those procedures are paid for by Medicare.

Outcomes Sciences Inc, a firm specializing in data registries, will develop the database and reporting criteria with help from AAO. The Centers for Disease Control and Prevention (CDC) will collect and transport samples of TASS-affected tissue to the FDA for analysis.

What is making the program possible at this time, according to the FDA, is that the agency’s Center for Devices and Radiological Health (CDRH) has developed new methods for detecting contaminants that remain on the delicate instruments used in eye surgery.

In addition to finding better ways of avoiding contamination, the CDRH hopes to determine how devices may be responsible for TASS incidents and to share that information with manufacturers to improve instrument safety.

“Information collected by the program will lead to the earlier investigation of national TASS outbreaks and determination of whether a medical device is the source of the outbreak,” explains Mavina Eydelman, MD, of the CDRH’s device evaluation office in a news release.

How prevalent is TASS?

The first goal is to establish how prevalent TASS is, especially in its more serious form, which can harm vision.

“The problem is that TASS is very rare, and we don’t know what the actual incidence is,” says Flora Lum, MD, who is consulting on database development for AAO. She is executive director of the AAO’s Hoskins Center for Quality Eye Care in San Francisco.

“Our people are developing the registry to develop a truer estimate of how often it occurs.”

Building the database

AAO is considering what information to ask for and recruiting surgeons to participate. AAO has not yet decided on a final reporting method for the registry. One possibility is the online Ophthalmic Patient Outcomes Database, which physicists already use to report data for the Centers for Medicare and Medicaid Services (CMS) Physician Quality Reporting System.

For the pilot, Dr Lum is asking surgeons to report on a web-based registry managed by Outcome Sciences. They are asked to report symptoms they have noted as well as products and devices used, such as the type of intraocular lens (IOL).

Questions will be refined following analysis of the pilot results, Dr Lum says. The final database will be open to all ophthalmologists, she says, but participation in the reporting is voluntary.

Cleaning is critical

The term “TASS” was coined by researchers at the University of Utah, where ophthalmology professor Nick Mamalis, MD, has been studying inflammation following ocular surgery. A task force he led after a 2006 outbreak found the most common cause was inadequate cleaning and sterilization of instruments.

Working with the American Society of Cataract and Refractive Surgery (ASCRS), the task force developed guidelines for processing instruments and a website for reporting TASS cases.

A smaller outbreak the previous year was blamed on a different cause: contaminated fluids used in

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the surgery. A recall of a batch of balanced salt solution (BSS) ended that incident.

In 2010, Dr Mamalis analyzed the TASS cases reported during the previous 3 years. Based on reports by 70 surgery centers, there were 909 cases of TASS out of 50,000 cataract surgeries, a rate of 1.8%. Dr Mamalis and his colleagues then made 54 visits to additional centers. They identified 367 cases out of 140,000 surgeries in the previous 3 years, a rate of 0.3%. The most common causes discovered were:

- inadequate flushing of phaco and irrigation/aspiration instruments
- remnants of enzymatic cleaners from inadequate rinsing
- reuse of cannulas and other devices, whether meant to be single use or reusable
- failure to properly clean ultrasonic baths after each use
- poor instrument maintenance
- presence of preservatives in medications used in the eye.

Dr Mamalis published his findings in the July 2010 Journal of Cataract and Refractive Surgery. “The updated report highlights that cleaning and sterilizing ophthalmic instruments remains a critical factor in TASS cases,” he wrote. In addition, medications injected in the eye must be free of preservatives. “This is especially important in terms of the epinephrine added to the BSS solution during surgery,” he added.

A near miss

A rare and likely under-reported condition like TASS makes it difficult to find accounts of actual cases. However, a pair of physicians found one that was narrowly prevented and were concerned enough to educate themselves about the behind-the-scenes instrument cleaning process.

According to Alex Cohen, MD, PhD, and Thomas Oetting, MD, MS, who posted their account on the University of Iowa Hospitals and Clinics website, they were present during a cataract procedure when the surgeon picked up a syringe filled with BSS to hydrate the wound. He depressed the plunger to force out air bubbles and waited to see a clear drop of BSS. Instead, the authors recall, “blue-colored fluid came out.” It was trypan blue dye remaining from a previous surgery, though the syringe had been cleaned and sterilized. Because the surgeon noticed in time, the patient received a different dose and recovered normally. “However,” the authors note, “this event seemed like a close call and could have very easily resulted in TASS.”

Had the patient been exposed to an irritant, the patient might have developed blurry vision, eye irritation, anterior segment inflammation, corneal edema, and other symptoms indicating inflammation. Because the procedure is outpatient, OR staff would not be aware of this, but the patient would be expected to inform the surgeon.

The diagnosis of TASS, according to Drs Cohen and Oetting, would be based on the following observations:

- The gram stain and culture are negative.
- The inflammation is limited to the anterior chamber.
- The condition improves with steroids.

Treatment varies depending on the severity. “Some cases are self-limited and don’t need treatment at all,” Dr Lum notes. “Others might require anti-inflammatory treatments such as corticosteroids.”

While finding and reporting TASS are the responsibility of surgeons, evidence so far points to the importance of thoroughly cleaning instruments, the task of OR and central processing staff. Dr Lum recommends using, until further notice, the 2007 ASCRS guidelines, available at www.ascrs.org. ❖

—Paula DeJohn

References


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Nurses’ weight linked to working conditions
Long work hours and jobs with less exertion and more limited movement were significantly associated with nurses being overweight and obese in a study in the November 2011 Journal of Nursing Administration. Of 2,103 female nurses surveyed, 55% were overweight (27% obese).

The results offer evidence for nurse executives, who may rethink nurse scheduling, the authors say. Making healthy food available with enough time to eat it may help reduce the risk of obesity and future health problems.

Access the study for free.
—http://journals.lww.com/jonajournal

Anesthesiology guidelines are updated
The American Society of Anesthesiologists has updated 3 documents with new evidence. The updates do not change current recommendations. Updates include:
• Practice advisory for preanesthesia evaluation
• Advisory for visual loss associated with spine surgery
• Guidelines for acute pain management in the perioperative setting.

Two surgical outcome measures endorsed
Surgical site infection (SSI) and urinary tract infection (UTI) have been endorsed as surgical outcome measures by the National Quality Forum.

The two measures, developed by the American College of Surgeons (ACS) with the Centers for Medicare and Medicaid Services (CMS), could be adopted as national outcome measures as early as 2015.

“Endorsement of these measures brings us closer to implementing outcomes-based measures on a national level,” says Clifford Y. Ko, MD, MS, MSHS, FACS, of ACS.

Study: Antimicrobial scrubs may reduce bacteria
Scrub suits impregnated with an antimicrobial agent plus good hand hygiene were effective in reducing methicillin-resistant Staphylococcus aureus on health care workers’ apparel and might lower the risk of transmitting MRSA to patients, say researchers.

In the study, 32 workers wore 4 pairs of identically appearing control and study antimicrobial-imregnated scrubs. Unannounced cultures were taken of the scrubs and hands weekly at the start and end of each shift.

Though the scrubs did not affect MRSA on hands, the antimicrobial scrubs did reduce the MRSA burden on the apparel. The scrubs are by Vestagen.


Mandatory overtime caps have intended effect
State limits on nurses’ mandatory overtime hours are working, reducing overtime for new RNs, a new study finds. Past research has found fatigue from long hours can lead to mistakes that imperil patients and nurses. The study is part of the RN Work Project funded by the Robert Wood Johnson Foundation, a 10-year study of new RNs.

—Bae S, Brewer C S, Kovner C T. Nurs Outlook. 2011. Published online.