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INSIDE

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Keep your hiring standards high, or risk adverse patient outcomes

Florida nurse was disciplined twice before case in which patient died

Hiring practices of same-day surgery providers are coming under scrutiny in the wake of five deaths this year following cosmetic surgery in Florida. A nurse involved in one of the cases had state disciplinary complaints filed against her at two previous jobs, including another incident in which a patient died.

In the most recent case, the registered nurse worked on a per-diem basis for a surgeon at a surgery center. **(For more information on hiring contract nurses, see *Same-Day Surgery*, October 2002, p. 121.)** The nurse "was highly recommended to us by a nurse who worked with her" at a hospital, said a surgeon who ran the center. Also, she possessed an active and clear license, and the managers were unaware of any previous problems, according to that surgeon.

The nurse handled anesthesia, at least initially, during the most recent operation in which the patient died, according to an adverse incident report the surgeon filed with the state. The surgeon's report stated that another nurse relieved her, but provided few other details. No action by the state has been reported against the nurse; however, at press time, the surgeon's license had been suspended.

In June 1997, the Florida Board of Nursing accused the nurse of

Audio conference tackles HIPAA concerns

The recently released final privacy rule under the Health Insurance Portability and Accountability Act (HIPAA) makes significant changes to the existing regulations. With the April 14, 2003, compliance deadline fast approaching, are your staff receiving the proper training?

The American Hospital Association says implementing HIPAA will require "sweeping operational changes" and will take "intense education of hospital workers and patients." To help you and your staff prepare, American Health Consultants offers **HIPAA's Final Privacy Regulations: What You Must Know to Comply**, an hour-long audio conference Dec. 4, 2002, from 2:30-3:30 p.m., ET.

(Continued on page 143)

falsifying records while working as a surgical recovery room nurse at a hospital. Although she failed to take a patient's vital signs, she indicated in the medical chart that she had, according to records.

When the nurse did check the patient, the patient had no vital signs, according to the state complaint. The patient was pronounced dead in the recovery room. The nurse paid a $250 fine, was reprimanded, was required to complete a course on medical documentation, and paid $567 to reimburse the state for its investigation.

In March 2002, the nursing board accused the nurse of improper handling of medication, including Demerol, while employed at a surgery center between June 18, 2001, and June 29, 2001. The state complaint said the nurse's medication records contained numerous errors, including "withdrawal of medication for a patient who was never admitted, improper corroboration of waste and excess, administration of medication without a physician's order, and nonadministration of medication that a physician did order." That case is pending before the nursing board.

The most recent incidents follow a 90-day moratorium on certain office-based surgery procedures in 2000 by the Florida Board of Medicine, which led to enactment of some of the nation's toughest office surgery standards. **(For more information, see *SDS*, November 2000, p. 133 and p. 137.)**

In the scramble to find nurses and other staff in the midst of a nursing shortage, there are steps that same-day surgery providers can take to ensure they hire and maintain competent staff.

"It's a tough thing; nurses are in a shortage," says **Jerry Henderson**, executive director of the SurgiCenter of Baltimore in Owings Mill, MD. "But sometimes a warm body is not good enough. You have to have people who are qualified."

Consider these suggestions:

• **Conduct a thorough interview.**

Dawn Q. McLane, RN, MSA, CNOR, executive director of Allied Physicians Surgery Center in South Bend, IN, says that in addition to education, your interview should cover these areas:

— **Employment history.** "I like the candidates to tell me about their work history — why they have chosen the path they have taken in the past," McLane says. "I look at longevity at previous

EXECUTIVE SUMMARY

A nurse involved in a Florida case in which a patient died had state disciplinary complaints filed against her at two previous jobs, including another incident in which a patient died. To avoid hiring an employee with previous disciplinary complaints, consider these steps:

- Credential nurses and other staff providing clinical care. Verify their licenses, and ensure they aren't listed on the Office of Inspector General Exclusion List.
- Call professional references, and ask your current employees about applicants. Ask applicants blunt questions regarding their experience.
- Follow your own timelines for evaluating staff, and perform ongoing competence assessment.
- Provide a detailed, comprehensive orientation and strong preceptors.

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Editorial Questions

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employers and like to ask if the candidates mind sharing why they left previous employers, including why they are currently seeking a change."

— **Personality.** "I ask the candidates to tell me what they believe their three greatest strengths and three weaknesses are with respect to the job they are applying for," McLane says. "This can be very telling."

— **Ability to cope with change.** "I ask the candidates to tell me how they feel about change in the workplace and how they cope with change," McLane says.

— **Involvement.** "I ask what types of committees the candidates would like to be a part of in this workplace, assuming they are familiar enough to answer this," McLane says.

— **Conflict.** "I ask the candidates to tell me about a time when they had to deal with anger, or disagreed with their boss, or were 'forced' to do something they didn't want to do, and how they reacted to it," McLane says. "The answers to these and similar questions tell me a lot about the employee that I can't get from a resume." Consider having two staff — one of whom is a manager — present at second interviews, McLane suggests. "I have found that including a second person often affords a different perspective of the candidates," she says.

You can "bounce" impressions off of the second person, McLane says. "If two candidates are clinically or technically equal, it is the professionalism, personality, team spirit, etc., that will make the difference.

• **Check out their experience.**

During the interviews, McLane asks for specific names of supervisors with whom she might speak about the applicant.

Don't accept a reference letter and simply stick it in a file, Henderson warns. "Letters in and of themselves mean nothing until you go back and check them," she says. Call their references, she advises.

Professional references, not simply personal references, are essential, McLane says. "One of the most useful sources of information available is talking with my current employees about their own experience with a potential candidate, provided this nurse has previously worked in the professional community," she says.

Ask very blunt questions regarding what kind of experience they've had after training, advises **David Shapiro**, MD, president of the San Diego-based American Association of Ambulatory Surgery Centers. "As everyone knows, most of medical training is based on experience after school has ended," he says. "They may have a freshly earned certificate in their hand, but they may not have had experience to handle an emergency situation as best as they could."

• **Credential your staff.**

It is imperative that administrators hire staff responsibly, McLane says. "Just like credentialing of our physicians, we must ensure that the staff we hire are competent to perform the job functions and roles that are assigned to them."

Have an established process

Henderson's facility credentials nurses in a process similar to one they follow for physicians, she says. The person who is delegated the responsibility, usually the administrator, takes the following steps, she says: He or she checks the person's license to be sure it is current. He or she contacts the state (it can be done on-line in Maryland) to be sure there hasn't been any action on that nurse's license. He or she also checks the Office of Inspector General (OIG) Exclusion List to ensure that the person hasn't been excluded from participating in any government-funded programs such as Medicare. You can check the OIG Exclusion List on-line at http://exclusions.oig.hhs.gov/search.html. Also, your Medicare Fiscal Intermediary should publish a list of licensed staff excluded from or reinstated to Medicare.

"If you have anyone working for you on that list, and you have Medicare and Medicaid patients, you risk being excluded from that program," Henderson says.

Every staff applicant providing patient care should be credentialed, she maintains. "It's a matter of scale," Henderson says. For example, because many nursing schools are no longer open, it is difficult to do primary source verification for nurses, she says.

"But you certainly can make sure, at least, that the license is valid," Henderson says. "Anyone can 'doctor' a copy of a license."

• **Meet Joint Commission requirements.**

Approximately 11% of ambulatory care facilities and 35% of hospitals received type 1 recommendations in 2001 from the Joint Commission on Accreditation of Healthcare Organizations for Human Resources standard 5 (HR5). Those standards are assessing staff abilities to fulfill job expectations (ambulatory care) and assessing, maintaining, and improving staff competency (hospitals).

SOURCES

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- **Standards Interpretation Group**, Joint Commission on Accreditation of Healthcare Organizations, One Renaissance Place, Oakbrook Terrace, IL 60181. Telephone: (630) 792-5900. Web: www.jcaho.org.

The problems are twofold, says **Lucille Skuteris**, RN, MS, associate director of the Standards Interpretation Group at the Joint Commission. One area concerns the lack of age-specific competencies, she says.

In the other area, "People aren't meeting [their] own expectations for frequency [that] they are to be evaluating staff members," she says. For example, facilities may say in their policies and procedures that they're going to evaluate staff on an annual basis, but they're two or three weeks late.

The Joint Commission doesn't specify that the evaluations have to be done annually, Skuteris points out. "Timeliness would be important, relative to the fact that you want to be able to identify any outstanding issues related to competency," she says. HR3 requires ongoing competence assessment in ambulatory care facilities and hospitals, Skuteris says.

Competency testing should include an ongoing annual re-appraisal of competency with high-risk, low-volume, or problem-prone cases, McLane advises.

• Ensure staff are adequately trained.

Provide a detailed, comprehensive orientation program, McLane advises. "The nurse should complete a thorough orientation program, and these competencies must be tested prior to the nurse taking solo responsibilities in these areas," she says.

Staff who lack experience need to be proctored until they can "fly on their own," Henderson says. Ensure that an ongoing education program is in place, "and that remedial education is available whenever needed," McLane suggests.

Once qualified staff are in place, be certain that nurses aren't asked to handle tasks for which they're not adequately prepared, Shapiro advises.

"To keep their jobs, they may agree to do something they're not trained to handle," he says.

Same-day surgery managers may go a lifetime without anything problematic happening in their facilities, Shapiro says. "But in an emergency situation, the lack of training shows up to the patient's detriment," he says. ■

Fight infection before it develops

Proper timing essential for prophylactic antibiotics

Antibiotics can be given prior to surgery to prevent infections, but how effective are they, and are they necessary for all same-day surgery procedures?

Between 40% and 60% of surgical-site infections can be prevented with the use of prophylactic antibiotics, but overuse, underuse, improper timing, and misuse of antibiotics occur in 25% to 50% of all operations, according to CMRI, a San Francisco-based quality improvement organization for the Centers for Medicare & Medicaid Services (CMS).

CMS and the Atlanta-based Centers for Disease Control and Prevention (CDC) are conducting a national health care quality improvement project to prevent postoperative infection, says **Mary Nash**, RN, BS, CNOR, surgical service line director for

EXECUTIVE SUMMARY

Same-day surgery program managers are evaluating the use of prophylactic antibiotics to decrease surgical-site infection rates. While not indicated for all procedures, prophylactic antibiotics can be effective in prevention of infection.

- Abdominal, gynecological, and urologic procedures are the best candidates.
- For greatest effect, administer antibiotic 30 minutes to two hours prior to first incision.
- Choose antibiotic based upon type of bacteria most likely to cause infection for each procedure.
- In most cases, antibiotics following surgery are not necessary.

Promina Gwinnett Hospital System in Lawrenceville, GA, and one of the participants.

One of the project's goals is to improve the selection and timing of antibiotic administration, she says. *(For more information about the collaborative study, go to www.surgicalinfectionprevention.org.)*

"Same-day surgery cases that are good candidates for prophylactic antibiotics include tonsillectomy and adenoidectomy, head and neck procedures, urologic, and gynecological procedures," Nash says. Because all of these procedures require the surgeon to work within the abdominal cavity or in proximity to other organs, there is greater risk of exposure from different bacterium than procedures that are considered "clean procedures," she explains.

Knee arthroscopy and many plastic surgery procedures carry a low risk of infection, so antibiotics are not needed, says **Dennis G. Maki**, MD, professor of medicine in infectious diseases at the University of Wisconsin in Madison. A surgeon should administer a prophylactic antibiotic for a clean procedure if the patient is diabetic or has any immunosuppressive condition, he adds.

Although Maki says the antibiotic can be given within two hours of surgery, Nash points out that the national study is looking at a one-hour timeframe. "We have decided that in our facility, we administer the antibiotic intravenously 30 minutes prior to the first incision," she says. Timing is critical because you want to make sure the antibiotic is in the tissue when you begin the procedure, she explains.

There is more than one type of bacteria that can cause surgical-site infection, Maki says. The major risk for infection in clean same-day surgeries comes from the staphoccoci that are found on the skin, he says. Cholecystectomy or gynecological patients are at risk for infection from anaerobic bacteria, he points out. For this reason, you should choose antibiotics carefully, he adds. **(For more information on antibiotics, see resource box, at right.)**

The most common antibiotic is cefazolin, Nash says. The dosage is 1 g, except when the patient is 20 pounds over the ideal body weight, then 2 g is given, she says. If the procedure lasts longer than four hours, an additional dose is given during surgery, she adds.

Cefoxitin is a good choice for gynecological patients because it is effective against anaerobic bacteria, Maki suggests. Postoperative prophylactic antibiotics generally are not needed or recommended, he says. Unnecessary antibiotics can increase incidence of diarrhea or vaginitis, he says.

"Some of our surgeons prescribe oral antibiotics for patients who have their tonsils or adenoids removed, but that is the only time we continue antibiotics with no sign of infection," Nash says.

In addition to studying the effect of prophylactic antibiotics on surgical-site infection, the 13-month collaborative study looks at other practices as well, she says. "We've already realized that the use of clippers rather than razors reduces infection, so clippers are our standard practice in both inpatient and outpatient surgery areas," she says. "Surgeons do have to become accustomed to an incision site that isn't as smooth, but there's less trauma to the patient's skin and less risk of infection," she adds.

Other items included in the study are the effect of keeping oxygen levels at 80% or above during surgery and keeping patients at normal thermic levels of 96.8 degrees in the post-anesthesia care unit, Nash adds. "We aren't far enough into the project to have conclusive data that these efforts are reducing our already low surgical-site infection rate, but these activities are supported in a variety of literature," she says. Anecdotal evidence indicates that all of these efforts do reduce the risk of infection, she adds. ■

SOURCES AND RESOURCES

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For information on antibiotics and their recommended use, contact:

- **Johns Hopkins Division of Infectious Diseases Antibiotic Guide**, www.hopkins-abxguide.org. This free on-line service is a decision-support tool that provides clinicians with concise, digested, timely information about the diagnosis and treatment of infectious diseases. Visitors can review recommend uses and treatment of infections by specific antibiotics, pathogens, or diagnosis through the site search engine.

53% cancellation rate cut to less than 20%

Preadmission visits before day of surgery pay off

A day-of-surgery cancellation rate of 53% was higher than the same-day surgery staff at North General Hospital in New York City was willing to accept, so a task force was put into place to identify reasons for cancellations and recommend solutions. Two years later, the rate never jumps above about 20%, and the reasons for these cancellations are usually out of the control of same-day surgery staff, such as the patient becoming ill the night before or morning of surgery.

The hospital's cancellation rate was significantly higher than the rate of other participants in the Maryland Quality Indicator Project, a benchmarking service offered by the Elkridge-based Maryland Hospitals and Health Systems. "After we saw our higher rate, we took a look at why procedures were cancelled on the day of surgery," says **Rosalie E. Vilar**, MA, RN, CPHQ, vice president of quality management at North General Hospital.

"We found that patients weren't prepped properly, had eaten just before arriving, had a medical condition that required a consult with another physician, or had gotten lost on the way to the hospital and arrived very late." **(See *Same-Day Surgery*, February 2002, p. 23.)**

The solution to these day-of-surgery cancellations was to create a preadmission area and have the patients come for their preadmission visit one week before their scheduled surgery, Vilar says. Within the preadmission area, patients receive education about their procedure, are seen by the anesthesiologist, have any diagnostic tests such as blood work and EKGs performed, and are seen by a internal medicine physician if a consult is needed due to another medical condition such as hypertension, she adds.

Because the consultation for other medical conditions was a frequent reason for same-day cancellations, the department of medicine developed a schedule that designates a block of time for each physician to cover the preadmission area, Vilar says. "Having the physician available to check the patient immediately enables us to address medical problems that might interfere with surgery," she says.

These medical problems can require adjusting medications such as blood thinners, addressing low potassium levels, or treating rashes that cover the site of the incision, says **Barbara Ann Harmer**, RN, BSN, MHA, director of surgical services at Florida Hospital in Kissimmee.

"If you wait until the day of surgery to see the patient, you don't have time to make changes that are needed," she says. For example, Harmer's facility has had a young patient show up for a dilation and curettage with her leg in a cast. "If we had seen her a few days early, we would have known to have a different action plan in place to address her lack of mobility," she explains.

Saying that her day-of-surgery cancellation rate is always near zero when the pre-op visit is made several days before surgery, Harmer is an advocate of preadmission visits for several reasons in addition to medical issues that may be identified. "If our anesthesiologist has a question for the physician of the patient who is being seen prior to a 7:30 a.m. surgery, how are we going to find that physician?" Harmer asks. Also, there is time to perform extra blood work or diagnostic tests that the anesthesiologist may order, she adds.

Having the patient visit you for preadmission prior to the day of surgery also prevents any delays or cancellations on the day of surgery because the patient can't find the facility or doesn't know where to park, says Harmer. "I would much rather have the patient be late to the pre-op visit and on time for the surgery," she says.

To make the preadmission visit easy for patients who might be traveling long distances to see their surgeons and have their surgery, Harmer's facility is flexible with the preadmission visit schedule and leaves gaps that can be used for patients who are in the surgeon's office and want to come over

EXECUTIVE SUMMARY

To meet the demands of patients, many same-day surgery programs offer pre-op telephone calls and preadmission screenings on the day of surgery. Some same-day surgery managers, however, have seen cancellations on the day of surgery rise and now ask patients to come in for the pre-admission work-up prior to the day of surgery.

- Patients are not likely to miss or be late to surgery due to unfamiliarity with the location and parking.
- Anesthesiologists have time to consult with patients' physicians about unanticipated medical conditions or to order extra tests.
- Nurses have the opportunity to see patients and rule out any physical conditions that might alter surgical plans.

SOURCES

For information on preadmission departments to reduce cancellations, contact:

- **Barbara Ann Harmer**, RN, BSN, MHA, Director of Surgical Services, Florida Hospital. E-mail: barbara.harmer@flhosp.org.
- **Rosalie E. Vilar**, MA, RN, CPHQ, Vice President of Quality Management, North General Hospital, 1879 Madison Ave., New York, NY 10035. Telephone: (212) 423-4164. E-mail: rosalie.vilar@ngsc.org.

for the preadmission visit immediately after the surgeon schedules the surgery. "We also use this time to talk about not eating before surgery, what to expect on the day of surgery, and answer general educational questions," Harmer says.

Moving away from the widely accepted pre-op visit that occurs on the morning of surgery may be hard for some same-day surgery programs because society encourages convenience, quick access, and as little disruption to the patient's life as possible, Harmer says. She does point out that this is surgery, and it needs to be taken seriously.

"We make too little of minimally invasive surgery, but we have to remember that it is major to the patient, so we need to take the appropriate amount of time to prepare the patient and ourselves for the procedure," Harmer says. "This is best done with a preadmission visit before the day of surgery." ■

Same-Day Surgery Manager

Vested interest: When staff take ownership

By **Stephen W. Earnhart**, MS
President and CEO
Earnhart & Associates
Dallas

We discussed physician ownership mentality last month. Now, let's talk about staff ownership issues.

A huge advantage the for-profit industry has over the not-for-profit surgery industry is the ability to offer financial incentives for increasing profitability within the business model. I say "increasing profitability" because these plans, like the physician incentives, are based upon increasing the profits from quarter to quarter and year to year. Whether managers like it or not, most of us, myself included, like financial recognition for services over and above the expected.

This is not to discount the value of "Well done, Steve! You have made a difference." That is great to hear and definitely strokes my ego, increases my sense of worth and purpose, and increases my morale and love for my job — but it doesn't pay the rent. Give me a financial incentive that is obtainable, and I can go far beyond what I was hired to do — joyfully!

How do you give your staff a vested interest in the profitability of your operations? With the physicians it is relatively easy. They purchased stock in the company, much like buying stock in a publicly traded company such as Mobil Oil, and are paid a dividend based upon the number of shares they own in the venture. There can be a number of ways to offer a bonus to staff, to provide them with a vested interest in the success of the center. My proposal is this: The current shareholders (physicians, corporate chair, hospital, management company, or others) purchase a block of shares for the staff. The current owners of the center can purchase X% of the operating entity for staff. When distributions are made to the physician and corporate owners, staff also have a pool of "cash" to distribute.

The method of distribution or determining which staff member gets what amount is up to each facility. I favor an equal distribution based on the number of staff members. After all, each should be contributing equally to the success of the center, or why would they still be there? This might be a good time (and excuse) to yank nonproductive staff. Handling of part-time individuals can be done on a prorata basis on number of hours worked.

Physicians or corporate owners of surgery centers might cringe at giving up equity in their centers, but by doing it this way, staff have an incentive to work closer and you avoid hiring new staff members who only will dilute the distribution to all. Can it be done? Yes, it might take some effort on the part of the partnership, but as an owner of surgery centers, I know the value of a well-trained staff and the cost savings minimal staff turnover can afford.

Do not discount the effect on a staff member who now actually "owns" a piece of the center. Wait until you see the attention that staff will pay to cost containment. After all, it is now their money they are spending. As a further carrot, imagine your recruiting power when you can offer "shares" in the surgery center to that nurse you are trying to recruit.

What will kill this concept is one of the same issues that kills so many surgery centers out there: greed. Management typically will try to keep as much of the distribution as it can and find excuses not to share it with all staff members. The potential for favoritism is very high. Then you end up with infighting and disgruntled employees and have accomplished just the reverse of your goal. Take the high path and distribute fairly to all.

For all you not-for-profit folks out there — you should not be left out. Many hospitals have found ways to keep you tied to them via incentives as well. Benefit packages and sign-on bonuses are only a few. However, more and more, we are finding not-for-profit hospitals spinning off their own surgery centers as a lower cost provider of outpatient surgery. Depending upon how those entities are established, you could qualify for the same opportunities. There is some great talent out there. Let's find a way to retain them.

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Hospitals put priority on outpatient surgery

Renovations add convenience in order to compete

Inconvenient parking. Not easy to find. No comfortable waiting area for family. These are just a few of the complaints same-day surgery patients have expressed over the years when asked about some hospital-based same-day surgery programs.

To address these complaints, hospitals are looking at same-day surgery as more than just another department of the hospital, says **David C. Loveland**, senior vice president of corporate relations for Evanston (IL) Northwestern Healthcare, which includes hospital-based same-day surgery programs at two hospitals.

EXECUTIVE SUMMARY

As hospital-based same-day surgery (SDS) programs compete with freestanding centers for patients, surgeons, and staff, physical and philosophical changes are made to add convenience, ease-of-access, and a more customer-focused service.

- Hospitals often renovate to move SDS programs to the exteriors of buildings with immediate access to parking.
- Marketing programs that promote elective cosmetic or eye surgery to public build patient referrals for physicians.
- Surgeons are given opportunities to participate in SDS programs as owners.

To improve the hospital's ability to compete with freestanding centers, the health care system set up a same-day surgery area on the third floor of the Evanston hospital and redesigned its parking garage so same-day surgery patients can park on the fifth level of the garage and walk through a canopied entrance directly into same-day surgery, says Loveland. The patient registers and is admitted in this area, and there is a comfortable family lounge in the area, he adds.

"Patients don't have to wander through the halls of a large hospital to find same-day surgery anymore, so we now offer the same convenience of a freestanding center," he explains. **(For information on what freestanding centers are doing to compete, see story, p. 141.)**

At the health care system's Glenbrook, IL, hospital, a major renovation will result in the relocation of same-day surgery and gastrointestinal diagnostics lab to a side of the hospital that will give them their own outpatient entrance, lobby, admissions area, and waiting area, Loveland says. "This is another example of customer-focused service with a separate entrance, parking right at the entrance, and an easy-to-find registration desk," he explains.

In addition to making sure physical facilities are appealing to customers, Loveland's facilities also have promoted elective surgical procedures to help surgeons attract new patients, he says.

"We've promoted cosmetic surgery procedures and LASIK surgery," he says. "The facility used advertisements and community newsletters to attract patients who were referred to surgeons on the hospital's staff. These materials were a good way to promote the same-day surgery program as well as the facility's surgeons, he adds.

Evanston's efforts to make hospital-based

SOURCES

For more information on positioning hospital-based programs to compete with freestanding surgery centers, contact:

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same-day surgery programs look more like freestanding centers in terms of convenience, pleasant environment, and easy access have been successful, Loveland says. "We knew that a Chicago-based eye center that specialized in LASIK had planned to open a center in our area, but we have developed such a strong position in this market, among consumers and physicians, that the company decided it would be too difficult to enter the market," he adds.

Making sure your same-day surgery program also keeps your surgeons happy is another way to compete with freestanding centers, says **Tim Clontz**, executive vice president at Moses Cone Health System in Greensboro, NC. Block scheduling and attention to quick turnover of rooms, have kept surgeons at the facility, he says. In addition, the hospital in Greensboro increased the number of operating rooms in the same-day surgery center on campus from six to eight in a four-year period.

The health system also set up the center as a limited partnership between physicians and the hospital, Clontz says. "These surgeons are part owners of the same-day surgery facility and equipment at Moses Cone Memorial Hospital, so their interests in the facility's success are the same as ours," he adds. A second same-day surgery center will be located on the ground floor of a three-story medical office building on the campus of Wesley Long Community Hospital, another Greensboro hospital in the system. This center also will give physicians an opportunity to partner with the hospital, Clontz says.

"The difference between the new center and the current center is that the physicians in the new center actually will have input into the day-to-day operations of the center," he says.

After years of continued growth in the demand for same-day surgery and the increasing pressure of freestanding centers, hospitals can no longer think of same-day surgery just like every other department, Loveland says. "From a customer service and an operational standpoint, you can't run an outpatient surgery department the same way you run an inpatient surgery department," he says. "Even if your same-day surgery department is within your building, you have to make it seem more accessible, more friendly, and discreet from other parts of the hospital." ■

Freestanding centers promote their advantages

Responsiveness to physicians, patient satisfaction

Hospital-based same-day surgery programs are doing a better job with operating room turnaround, moving patients through the surgery day faster, and listening to physician concerns, but freestanding centers still have the edge in a number of areas, say experts interviewed by *Same-Day Surgery.*

"There's an esprit de corps, a positive staff attitude, and a motivation to do a good job in a freestanding program that isn't always found in a hospital-based program," explains **Susan R. Hollander**, MBA, CHE, regional vice president of Aspen Healthcare, a Boulder, CO-based consulting firm that specializes in ambulatory surgery center joint-venture development, management, and ownership. "I'm not saying that you can't find the attitude in a hospital-based program, just that freestanding center managers have been better at inspiring the attitude," she adds.

EXECUTIVE SUMMARY

Managers of freestanding centers have to look carefully at activities that differentiate them from the hospital-based programs. Some of the advantages include:

- positive staff attitude and pleasant environment for patients and physicians;
- efficient use of surgeons' time because operating rooms are turned over quickly and schedules are not disrupted by emergency cases;
- responsiveness to physician requests because there are fewer layers of administration to reach a decision;
- ability to be creative with local partnerships to offer services that benefit patients.

A positive staff translates into satisfied patients, and that means happy physicians, Hollander says. Physicians want to know that their patients are treated well and that they remember the surgical experience as a positive experience, she says.

Add patient satisfaction to efficiency and no lost time for the surgeon, and those factors add up to happy surgeons, Hollander says.

While hospital-based programs have been improving turnaround times, freestanding centers still have the advantage for keeping a surgeon on time, says **Luke M. Lambert**, chief financial officer for Ambulatory Surgical Centers of America, an ambulatory surgery center development and management company based in Norwell, MA. "Many hospital-based programs still bump outpatient procedures when emergency cases come into the hospital," he says. "This means that the ophthalmologist who planned on completing all of his cases by noon won't be finished then, and may even have some procedures moved to another day."

Although many hospitals set up same-day surgery centers that are separate from the inpatient surgical department to address issues such as emergency cases interfering with the schedule, Lambert and Hollander say that there is one area in which freestanding centers still excel.

Even when a hospital sets up a freestanding center, it is still run with a "hospital mentality," Lambert says. "This means that the same bureaucracy exists in many areas such as purchasing, staffing, and addition of services."

Hollander has been associated with surgery centers owned by hospitals and with independent freestanding centers, and the hospital-affiliated centers have more layers to the decision-making process, she adds. "This means that the freestanding centers can respond to physician requests more quickly." The responsiveness of administration to any physician request, question, or concern truly sets a freestanding center apart, she adds.

The ability to be more creative in partnering with local businesses is another aspect of a freestanding center's ability to make quick decisions and go outside restrictions that may be placed on hospital-based programs by organizational policies, Hollander says. "I've seen surgery centers work with local banks to develop a financial package for patients undergoing elective cosmetic or oral surgery," she says.

Hollander also has heard of a surgery center that attracted patients from a great distance, so the same-day surgery manager partnered with a local hotel to offer reduced rates and room service to the patient and family members. "Although patients might not need overnight care, they might want to rest a night before starting a long drive back home," she says. This is a good service that any freestanding center with patients driving a great distance can use to increase patient and physician satisfaction, she suggests.

It also is important for freestanding centers to focus on their payer relationships, Lambert says. "A freestanding surgery center saves the payer money because the fees are generally lower than a hospital-based program's fees, and their customers are happy with the services," he says.

Freestanding surgery centers need a solid relationship with payers to ensure they are included in the payers' panels, Hollander says. "Years ago, a surgery center manager needed to make sure the center was listed with the hospitals rather than the physicians in the payer's approved provider list so that patients could find them," she says. That problem doesn't exist as much today, but surgery center managers still need to work closely with their payers to make sure listings are accurate and appropriate, she adds.

There also are freestanding surgery centers that are going directly to self-insured major employers, says Hollander. The center managers can

SOURCES

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show that they offer cost-effective care, have qualified surgeons on staff, and score high in the patient satisfaction category, she adds.

Perhaps, the key to freestanding surgery centers' success is the development of strong physician relationships, Hollander says. "Physicians have choices of surgery programs to which they can send their patients, but freestanding centers have the reputation of being a nice place to work," she says.

While surgery centers do offer benefits to physicians in terms of efficiency and responsiveness, it is usually the atmosphere that surgeons notice the most, she says. "My husband is an ophthalmologist, and he looks forward to his day of surgery at a freestanding center because it is such a pleasant environment," she says. ■

West Nile virus — advice on elective procedures

In the midst of a federal investigation of six potential cases of West Nile virus (WNV) transmission through blood transfusion, the Centers for Disease Control and Prevention has issued a "fact sheet" with deferral listed as one option for elective procedures.

The fact sheet says, "In elective situations, medical decisions about transfusion should take into account the personal preferences and concerns of individual patients and their health care providers. Options may include deferral of elective procedure or, in some instances, use of autologous [self] blood transfusions." To access the fact sheet, go to www.cdc.gov. Click on "In the News" and then "West Nile Virus."

According to **Jesse Goodman**, MD, MPH, deputy director of the Food and Drug Administration's Center for Biologics Evaluation and Research, it is believed that the WNV can be transmitted through blood transfusions, but the level of risk isn't certain.

Goodman said patients might want to look at alternatives to receiving blood if they are worried. A story published Sept. 20, 2002, in the *Miami Herald* quoted Goodman as saying options for surgery patients include donating blood for their own surgery in advance, using blood-recovery techniques during surgery, and perhaps delaying elective surgery. **(For more information on blood-recovery techniques, see *Same-Day Surgery*, May 2002, p. 62.)** ■

Comment on open, unused single-use devices

The Food and Drug Administration (FDA) is accepting comments about current practices with opened but unused single-use medical devices. The FDA is interested in comments related to:

- whether hospitals have a written policy or procedure for handling sterile, single-use medical devices that are opened, for whatever reason, but are unused;
- how hospitals determine if a single-use medical device that has been opened but unused is contaminated;
- what types of single-use medical devices are resterilized because they are opened but unused.

Submit written comments by Nov. 26, 2002. Individuals may submit one copy; all others should submit two copies. Identify comments with the docket number fr28au02-118. E-mail comments to www.fda.gov/dockets/ecomments. Scroll down to "00D-0053 — Determining Hospital Procedures for Opened-But-Unused, Single-Use Medical Devices." Send written comments to the Dockets Management Branch (HFA-305), Food and Drug Administration, 5630 Fishers Lane, Room 1061, Rockville, MD 20852. ■

(Continued from cover)

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CE/CME objectives

After reading this issue the continuing education participant will be able to:

- Identify same-day surgery procedures that benefit most from prophylactic antibiotic use. (See "*Fight infection before it develops.")*
- Identify why pre-admission visits prior to the day of surgery are beneficial to the facility and the anesthesiologist. (See "*53% cancellation rate cut to less than 20%.")*
- Discuss the advantages of offering physicians an opportunity for ownership in hospital-based same-day surgery programs. (*See "Hospitals put priority on outpatient surgery.")*
- Identify the aspects of a freestanding surgery center's operation that can be used to promote its advantage over hospital-based same-day surgery programs. (See "*Freestanding centers promote their advantages.")* ■

CE/CME *questions*

Save your issues with the CE/CME questions to take the semester tests in June and December. A Scantron form will be in those issues, but questions won't be repeated.

17. According to Dennis G. Maki, MD, professor of medicine of infectious diseases at the University of Wisconsin, which procedure(s) is/are not likely to require a prophylactic antibiotic to prevent surgical site infection?
    A. Cholecystectomy
    B. Urologic
    C. Plastic surgery
    D. Knee arthroscopy
    E. A and D
    F. C and D

18. Why is a pre-admission visit prior to the day of surgery an advantage for the anesthesiologist, according to Barbara Ann Harmer, RN, BSN, MHA, director of surgical services at Florida Hospital?
    A. The anesthesiologist has an opportunity to consult with patient's physician about medical conditions.
    B. This eliminates the need for an anesthesiologist screening on the day of surgery.
    C. The anesthesiologist can bill for the preadmission visit in a more timely manner.
    D. The patient feels more comfortable meeting the anesthesiologist before surgery.

19. Giving surgeons an opportunity to be an owner in a hospital-based same-day surgery program provides what benefits to the hospital, according to Tim Clontz, executive vice president at Moses Cone Health System?
    A. It increases chance of insurance reimbursement.
    B. It helps staff prepare preference cards.
    C. Surgeons have a vested interest in the program's financial success.
    D. Patients feel more comfortable in a physician office-type setting.

20. What is one of the major advantages a freestanding same-day surgery center has over a hospital-based program, according to Susan R. Hollander, MBA, CHE, regional vice president of Aspen Healthcare?
    A. Location
    B. Claim filing procedures
    C. Responsiveness to physician requests
    D. Number of staff members

2002 SALARY SURVEY RESULTS

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Firemen hats, candy, and games can increase productivity

Create positive work environment in outpatient surgery for stress relief; retention

In 1974, the magic number for Hank Aaron was 715 as he broke the home run record held by Babe Ruth. It also was the magic number for the staff at Butler County Surgery Center in Hamilton, OH, when they reached their goal of 715 procedures in one month.

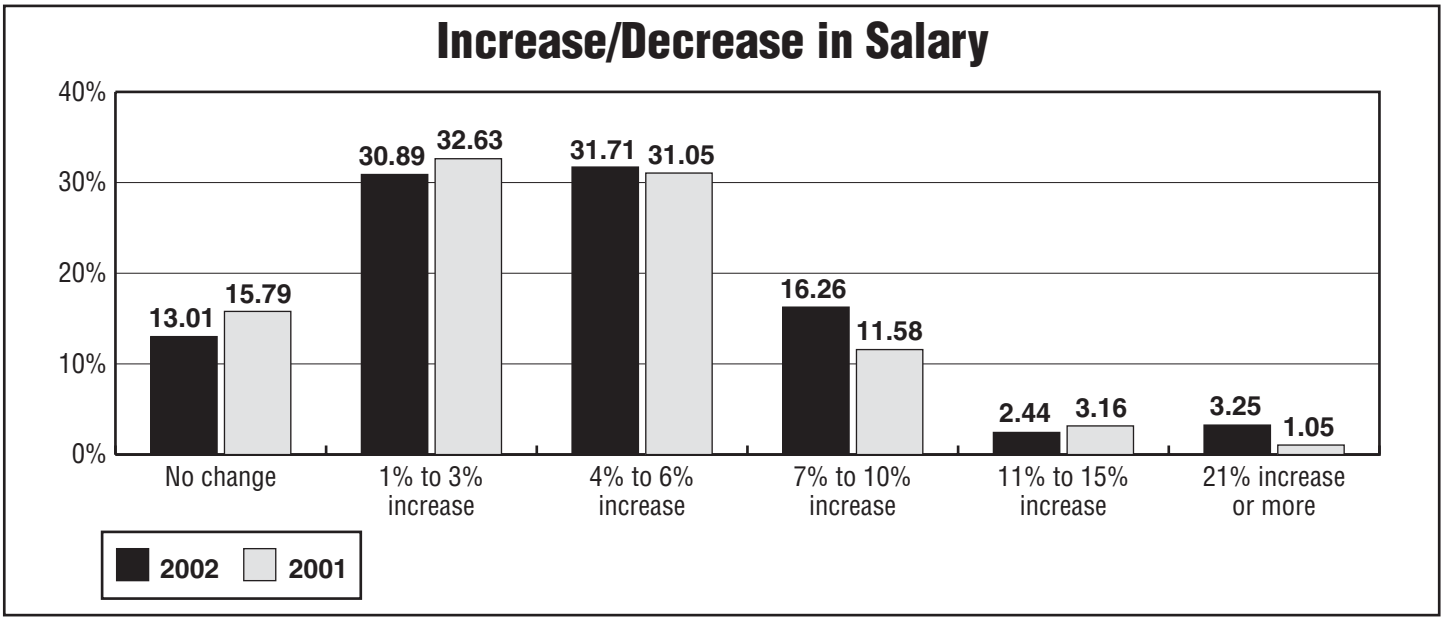
Movie tickets and popcorn were distributed to all 65 employees.

"It was a simple gesture that showed that the physician owners and I recognized what they did and appreciated it," says **Mary Ann Gellenbeck**, RN, CNOR, facility administrator of Butler County Surgery Center. **(For other ways to show appreciation, see *Same-Day Surgery*, August 2002, p. 106.)**

Showing appreciation is a critical component of being a same-day surgery manager today, say experts interviewed by *SDS.* The volume of procedures causes stress and increases the likelihood of burnout and staff turnover, they say.

Even though 57.72% of the respondents to the *SDS* 2002 Salary Survey did report an increase in staff, as compared to 52% in 2001's survey, same-day surgery workloads continue to increase. The survey was mailed in July to 897 subscribers. There were 123 responses, for a response rate of 13.7%.

"The increase in surgical technology has made it possible to move more complicated surgeries to the same-day setting, but it also increases the nurse's role in discharge education because these surgeries require more education for the patient,"



EXECUTIVE SUMMARY

Creating a positive work environment is important for same-day surgery managers who want to retain an experienced, productive staff. Challenges that create stress in same-day surgery programs include new technology, volume, and speed of procedures and turnover. Managers have found that the following activities help reduce stress:

- Recognize employees for achievements.
- Keep the lines of communications open between staff and managers.
- Involve employees on committees and task forces.
- Make sure employees receive adequate training for their jobs.
- Look for ways to make inservices fun.

says **Pat Hickey**, RN, BSN, MS, CNOR, director of performance improvement for Palmetto Health Richland in Columbia, SC. This need for more patient education also comes at a time when the emphasis is on quick turnaround, he adds. Same-day surgery nurses find themselves pulled in many directions as they try to balance patients' needs with the scheduling needs of surgeons and anesthesiologists, he adds.

Increased volume and balancing everyone's needs requires lots of time. In fact, 92.69% of the survey respondents work more than 40 hours per week, with 14.64% of those respondents reporting more than 56 hours per week. **(See chart, below.)**

How do same-day surgery managers handle the problem of staff stress? "I try to create a positive work environment by having fun when we can," Gellenbeck says.

At Brookwood Medical Center in Birmingham, AL, $1 appreciation certificates (called "wow" certificate) for the hospital cafeteria or $10 wow certificates for local stores or restaurants are given to employees for helping other staff members or going above and beyond, says **Lorraine J. Butler**, RN, MS, CNOR, assistant vice president of surgical services.

"We also publish a newsletter each month that lists the names of staff members who received our wow certificates," she adds.

Salary increases alone don't relieve stress

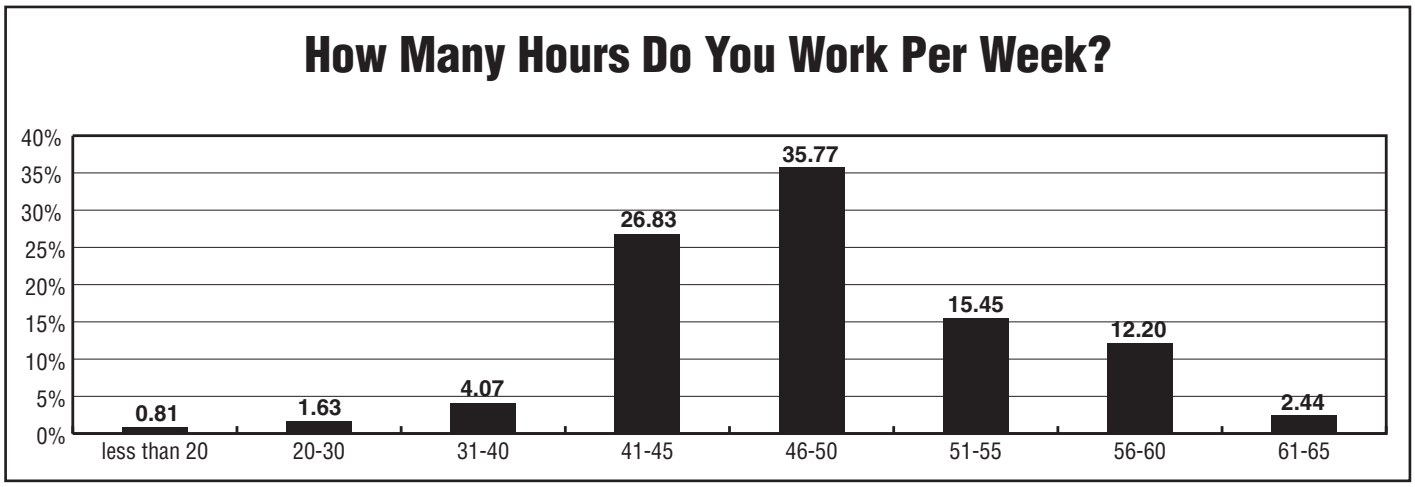
Although 16.26% of survey respondents reported a salary increase of 7% to 10% in the past year, salary alone is not enough to relieve stress and create a pleasant workplace, Gellenbeck says. **(See chart on cover.)**

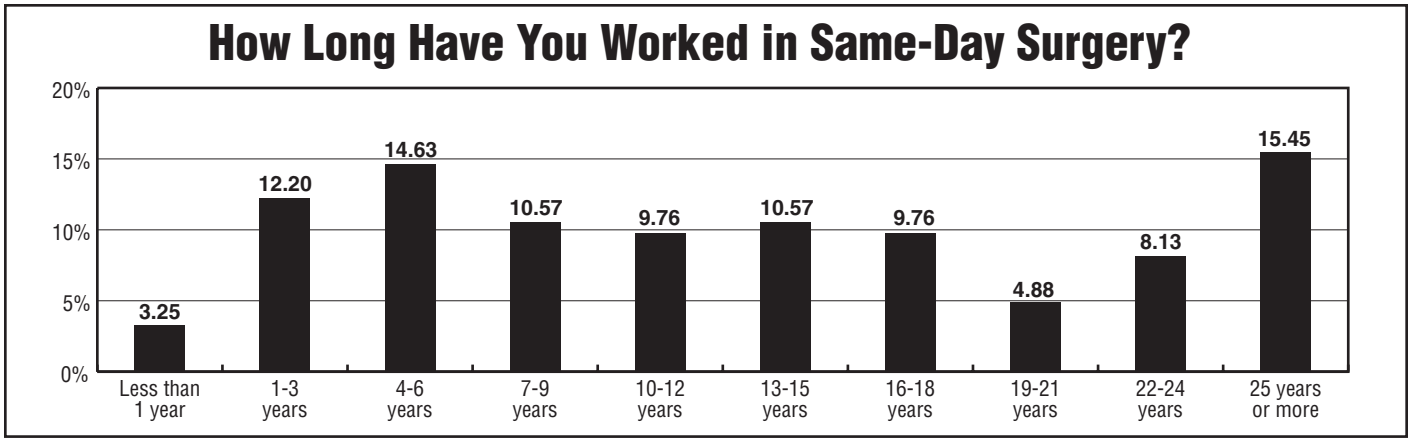
"It is important to offer competitive salaries, but people want to work in a place where they feel useful, appreciated, and recognized," she says. "I've had nurses take pay cuts to come to work for me." **(See *Same-Day Surgery*, July 2002, p. 85, and p. 87.)**

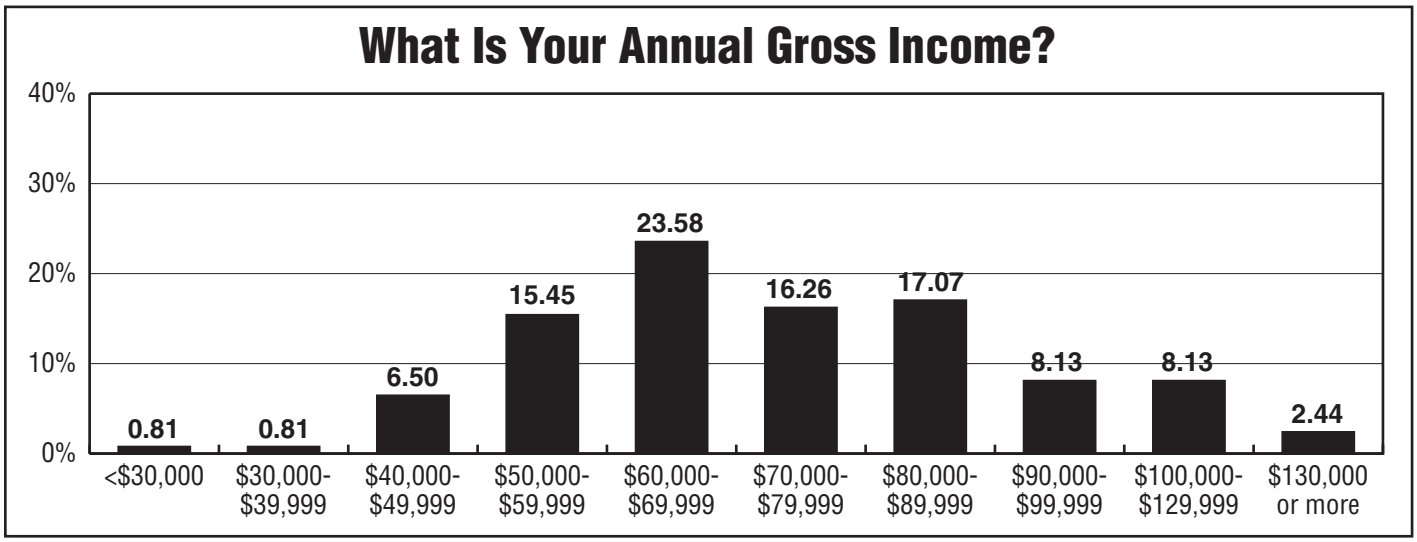
Appreciation of a job well done and a willingness to listen to employees' concerns and suggestions is more important than salary levels, adds Gellenbeck.

One way to make employees feel valued and respected is to have an open-door policy, suggests Hickey. "Employees need to know they can talk with their manager about anything and they'll be listened to," he says. Open communication enables employees to talk about problems when they are small instead of letting them fester and grow into big problems, he adds.

"The most important thing a manager can do is to be a good listener," Butler says. Not only do you need to listen, but you also need to be an advocate for your staff, she adds. "I frequently talk to our OR committee, as well as individual surgeons, about issues that staff members discuss, so they can be realistic in their expectations of what staff members can do," she adds.







Hickey also recommends the use of work groups to address issues in the program. "When you give employees a chance to make decisions related to the work, they are more positive," he says. "Involvement in committees also gives employees a better understanding of the issues managers face each day."

With 33.33% of the *SDS* survey respondents indicating that they are administrators, and 18.7% saying that they are directors or CEOs, with whom can managers talk to relieve stress? "It's hard for any manager to find appropriate people to whom they can vent their frustrations," Gellenbeck admits. "But all managers need to remember that they never vent to their employees," she adds.

Choose someone to whom you report, or network with other people in similar positions in other same-day surgery programs, she suggests.

Networking and attending conferences is an important part of a manager's stress relief, Gellenbeck emphasizes. Although 66.67% of the survey respondents have worked in health care for 22 or more years, and 58.55% of the respondents have worked in same-day surgery for more than 10 years, there always is something to learn, Gellenbeck says. "Learning new things is exciting and rejuvenating," she says. **(See chart on number of years worked in same-day surgery, above.)**

Although technology makes life easier, new technology also can cause stress if the employee doesn't feel comfortable using the equipment, Hickey says. "Make sure you tap into resources from your industry representatives for inservices," he says. "Provide employees with one-on-one demonstrations as well as group instruction, and make sure you train everyone, including part-time employees."

Special challenges for freestanding programs

Training for all situations is especially important for the staff of freestanding surgery centers, Gellenbeck says. A total of 73.17% of survey respondents indicated they were located in a freestanding center. Of these, 26.83% are hospital-affiliated, 8.13% are part of a chain, and 38.21% are independent.

"The staff members of freestanding centers have challenges not faced by hospital-based

employees because they are on an island," says Gellenbeck.

"If you don't see the supply you need, there's no hospital central supply to call. If you have a code, you handle it without backup from [the intensive care unit] or the emergency department." For these reasons, it's important to prepare staff to respond quickly and competently to different situations, she says.

"All of my nurses are advanced cardiac life support- and pediatric advanced life support-certified, so they do know they can handle a problem with a patient," Gellenbeck says. While the classes for these certifications are serious, she looks for ways to make other inservice education fun.

"We all have to have a yearly inservice on fire safety, but no one says you can't pass out inexpensive fireman hats and Red Hots [candy] at the meeting," says Gellenbeck.

Her facility also incorporates games into inservices. "Of course, *The Price is Right* is perfect for meetings at which we discuss cost-savings issues," Gellenbeck says. For cost-related meetings, she uses a combination of clinical items, as well as supplies such as ink cartridges, to show that everyone, not just clinical staff, needs to be aware of the cost of supplies. Employees have an opportunity to guess at the cost of each item and employees who get closest to the real price win small prizes, she explains.

Another key to managing stress is proper nutrition, exercise, and a balance in your life, Hickey says. "We nurses are our own worst patients. We take care of everyone else but ourselves," he says.

SOURCES

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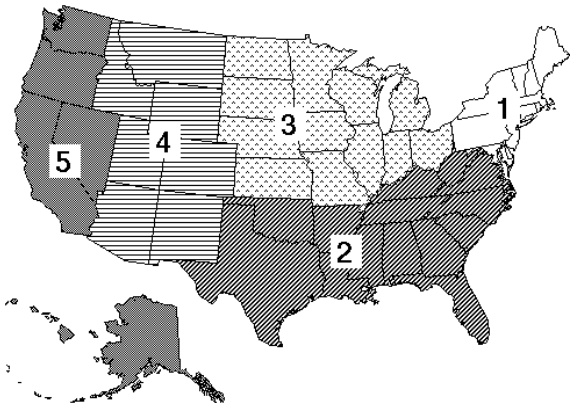
In addition to walking as a form of exercise and stress relief, Butler suggests that nurses stay in touch with family and friends.

"I moved to Alabama to take this job, leaving friends and family back in New York. I make a point of speaking with them by telephone regularly because contact with family and friends keeps you from making work the only thing in your life," she says.

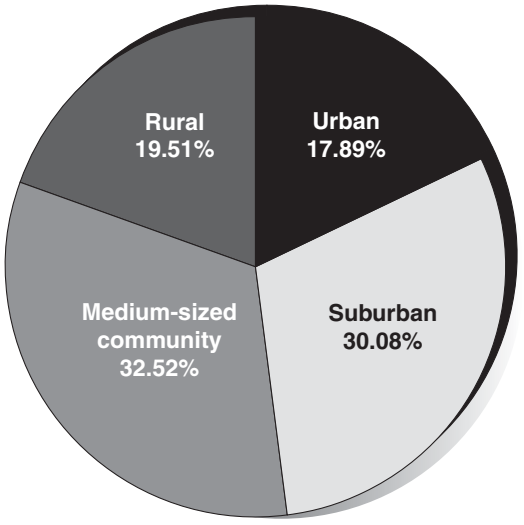
Gellenbeck agrees and adds, "Be sure you make time for family and friends. After all, a friend once told me 'You can love your work, but it can't love you back.'" ■

Where Is Your Employer Located?



Region 1	20.33%
Region 2	24.39%
Region 3	37.40%
Region 4	5.69%
Region 5	8.94%

Describe Work Location



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Supplement to *Same-Day Surgery*

November 2002, BB #S02116

Role of COX-2 Specific Inhibitors for Pain Management after Ambulatory Surgery

Author: **Girish P. Joshi, MB, BS, MD, FFARCSI,** Professor of Anesthesiology and Pain Management, University of Texas Southwestern Medical Center at Dallas.

Peer Reviewer: **J. Lance Lichtor, MD,** Professor, Department of Anesthesia, University of Iowa, Iowa City.

The practice of ambulatory surgery is rapidly expanding with more extensive and potentially more painful surgical procedures being performed on an outpatient basis. One factor affecting the outcome of outpatient surgery is the adequacy of postoperative pain management. Uncontrolled pain increases the duration of stay in the post-anesthesia care unit (PACU), delays discharge home, and increases the incidence of unanticipated hospital admission. Furthermore, inadequate pain relief delays return to daily living functions and decreases patient satisfaction. These factors have increased the need for providing adequate pain relief after ambulatory surgery.[1,2]

Many receptors are involved in the processing and alteration of the pain signal. For this reason, a combination of analgesic medications including nonsteroidal anti-inflammatory drugs (NSAIDs), local anesthetics, and opioids can be used to treat postoperative pain. Combining different analgesic modalities can provide more effective pain relief with fewer side effects.[3] Furthermore, multimodal interventions may lead to a reduction in undesirable sequelae of surgical injury and improved functional recovery and reduction in postoperative morbidity.

NSAIDs Grow in Popularity

When NSAIDs are used in combination with opioids (usually for moderate-to-severe pain), they enhance the quality of opioid-analgesia and reduce opioid requirements.[1] Furthermore, the opioid-sparing effects of NSAIDs lower the incidence of opioid-related side effects and facilitate postoperative recovery. In addition, NSAIDs have a more prolonged analgesic effect, which may reduce the risk of breakthrough pain. Therefore, NSAIDs are valuable in postoperative pain management. Use of nonopioids (e.g., NSAIDs) prior to surgery decreases intraoperative opioid requirements, which may reduce the incidence of postoperative nausea, vomiting, dizziness, and drowsiness, and facilitate recovery and discharge from the hospital.[4]

In addition, several studies have reported that premedication with NSAIDs given 60-90 minutes prior to surgery can reduce the degree of postoperative pain, analgesic requirements, and discharge times.[3,5] However, Moniche, et al[6] in their review of preemptive analgesia, concluded that NSAIDs should not routinely be given preoperatively because of the lack of enhanced analgesic effects and the potential for increased intraoperative bleeding. **(See adverse effects below.)** The other concern with preoperative oral administration of NSAIDs is the increased risk of gastric side effects when these drugs are administered on an empty stomach.

Adverse Effects of NSAIDS

The major concern regarding the use of NSAIDs in the perioperative period is that their antiplatelet effect may increase the risk of perioperative bleeding.[7,8] Current practice guidelines recommend that the administration of NSAIDs be delayed until surgical bleeding is no longer a risk. Furthermore, it is recommended that NSAIDs should not be used in patients with preexisting coagulation defect, in those undergoing procedures with an extensive tissue dissection (e.g., surgery involving skin flaps), or in surgical procedures with high possibility of bleeding (e.g., tonsillectomy). Some authors recommend that if a patient is chronically receiving NSAIDs before elective surgery, they should be

discontinued.[9] The limitations of NSAIDs prevent their use even when they would otherwise be desirable. The development of cyclooxygenase (COX)-2 specific inhibitors, a new group of anti-inflammatory drugs, may avoid some of the side effects associated with traditional NSAIDs.[10]

Cyclooxygenase Enzyme Physiology

COX exists as two distinct isoforms: COX-1 and COX-2.[10] Although these isoforms share size and substrate specificity, they differ in their expression and distribution. The COX-1 enzyme is expressed constitutively by most tissues including gastrointestinal tract, kidneys, platelets, and brain. COX-1 is responsible for the physiological production of prostaglandins and confers protective effects on the gastric mucosa, platelet function, and renal function.

In contrast, the COX-2 enzyme is induced in response to tissue injury, inflammation, and pain. Although COX-2 is expressed constitutively in the kidneys and brain, its significance in these areas is still unknown. Unlike traditional NSAIDs, which block COX-1 and COX-2, the COX-2 specific inhibitors avoid the side effects associated with COX-1 inhibition while providing anti-inflammatory and analgesic efficacy.

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Editorial Questions

Questions or comments? Call **Joy Daughtery Dickinson** at (229) 377-8044.

Conflict-of-Interest Disclosure: Rebecca S. Twersky, MD, (board member) reveals that she is on the speaker's bureau and performs research for Stuart/Zeneca Pharmaceuticals, Roche Laboratories, Anaquest, Abbot, Marrion Merrill Dow, and Glaxco Welcome. Girish P. Joshi (author) discloses that he performs research for Pharmacia, is a consultant, and is on the speaker's bureau for Pharmacia and Pfizer. J. Lance Lichtor (peer reviewer) has no relationships to disclose. Kay Ball (board member) discloses that she is a consultant for Steris Corp. Encision, Encision-AMT, and Megadyne. Sandra K. Tunajek (board member) reveals that she serves as a consultant to the American Nurses Credentialing Center Commission on Accreditation.

Exploration of COX-2 Specific Inhibitors

Celecoxib, rofecoxib, and valdecoxib are the COX-2 specific inhibitors that are currently used clinically. Parecoxib is a parenteral COX-2 inhibitor undergoing phase III clinical trials for the management of acute and severe postoperative pain. It is a prodrug of valdecoxib. Clinical studies have shown that these drugs provide pain relief and spare NSAID-induced side effects.

• **Celecoxib.** Celecoxib is an oral COX-2 specific inhibitor, which has a 375-fold greater selectivity for COX-2 than COX-1 inhibition. It has a 22-40% bioavailability, with analgesic onset of 30-60 minutes and time to peak concentration of two hours after oral administration. It is eliminated predominantly by hepatic metabolism and has no active metabolites. The elimination half-life of celecoxib is approximately 11 hours. The analgesic efficacy of celecoxib has been evaluated in patients undergoing dental, orthopedic, and gynecologic procedures. The analgesic dose for postoperative pain relief is 200 mg twice a day.[11]

After orthopedic surgery, celecoxib 200 mg TID provided superior analgesia than hydrocodone 10 mg and acetaminophen 1,000 mg combination TID hydrocodone and acetaminophen combination. Furthermore, the patients in the celecoxib group had significantly fewer side effects (e.g., nausea, somnolence, dizziness, and constipation). [11]

• **Rofecoxib.** Rofecoxib has an 800-fold greater selectivity for COX-2 than COX-1. It has a 92-93% bioavailability after oral administration. The elimination half-life of rofecoxib is 17 hours (approximately 50% greater than celecoxib). The effective dose for postoperative pain relief is 50 mg once a day.[12,13] However, it is recommended that the 50 mg dose should not be used for more than five days due to concerns about potential renal side effects.

Reuben et al[12] evaluated the benefits of preoperative analgesia in patients undergoing arthroscopic knee surgery. Compared with postoperative administration, rofecoxib 50 mg given one hour prior to surgery significantly increased the time to first analgesic. In addition, patients in the preoperative group had less pain and required significantly less rescue analgesics (i.e., oxycodone and acetaminophen). Another placebo-controlled study compared the analgesic efficacy of a single dose of rofecoxib 50 mg and celecoxib 200 mg given orally before spinal fusion surgery.[13] Postoperative patient-controlled analgesia (PCA) was provided with intravenous (IV) morphine. The results showed that compared with placebo, both analgesics had a significant postoperative opioid-sparing effect.[13] However, rofecoxib provided a longer duration of analgesia as compared with celecoxib (24 hours vs. eight hours).

• **Valdecoxib.** Valdecoxib is a new COX-2 specific inhibitor that is approximately 28,000-fold more selective for COX-2 than COX-1. It has an active metabolite SC-66905, which is a highly selective and potent inhibitor of COX-2, with a selectivity 6,800-fold greater for COX-2 than COX-1. The elimination half-life of valdecoxib is approximately 11-13 hours. Effective postoperative analgesic dose of valdecoxib is 40 mg once a day or 20 mg twice a day.[14, 15]

Camu, et al[15] evaluated the analgesic efficacy of valdecoxib 20 mg and 40 mg administered preoperatively and then twice

daily postoperatively after total hip arthroplasty. The patients receiving valdecoxib required 40% less morphine over the 48-hour study period as compared with those receiving the placebo. In addition, the pain intensity levels and patient satisfaction were significantly superior in the valdecoxib groups. However, the morphine requirements and pain scores between the two doses of valdecoxib were similar suggesting that valdecoxib 20 mg BID may be the "ceiling" dose.

• **Parecoxib.** Parecoxib is a second-generation parenteral COX-2 inhibitor, which is an inactive prodrug that is enzymatically hydrolyzed in the liver into valdecoxib. Pharmacokinetic studies have shown that after intravenous administration, peak concentrations of parecoxib are achieved within two to three minutes with an elimination half-life of five minutes. The plasma concentrations of valdecoxib peak within 45 minutes with an elimination half-life 11-13 hours. Because an intravenous formulation of COX-2 inhibitors would be ideal for moderate-to-severe perioperative pain, it is possible that parecoxib will fulfill some of the desirable characteristics of ketorolac, which lacks the specificity of COX-2 inhibitors.

Clinical trials in various surgical models reported that parecoxib compared favorably with ketorolac.[16-18] A placebo-controlled study evaluated the analgesic efficacy and safety of a single intravenous doses of parecoxib 20, 40, and 80 mg administered prior to oral surgery.[17] The results showed that all doses of parecoxib provided significantly superior analgesia compared to placebo. Parecoxib 40 mg and 80 mg were superior to parecoxib 20 mg. However, there were no differences between the parecoxib 40 mg and 80 mg groups suggesting that a plateau is reached at the dose of 40 mg.

Safety of COX-2 Inhibitors

The safety profile of the COX-2 inhibitors has been extensively investigated. These group of drugs are associated a lower incidence of symptomatic ulcers and ulcer complications, as compared with standard doses of NSAIDs.[19,20] Unlike traditional NSAIDs, platelet function is not affected by the coxibs and is similar to that of a placebo. A double-blind, placebo-controlled randomized study compared the effects on platelet function of a supratherapeutic dose of celecoxib (600 mg BID) with a standard dose of naproxen (500 mg BID).[21] The results showed that unlike celecoxib and placebo, naproxen produced statistically significant reduction in platelet aggregation and serum thromboxane B_2 levels and increased the bleeding time. Similar results have been observed with rofecoxib and valdecoxib.[22, 23] However, the effects of these drugs on renal function are not understood completely. Recent studies suggest that COX-2 inhibitors produce effects on renal function similar to traditional NSAIDs.[19, 20] Compared with rofecoxib 50 mg, celecoxib 200 mg has been reported to be associated with less cardiorenal effects (i.e., peripheral edema and hypertension).[24, 25]

Summary

Adequate pain control facilitates early ambulation and improves patients' perception of the quality of their surgical experience. However, the management of pain after ambulatory surgery poses some unique challenges for the practitioner. Outpatients undergoing day-case procedures require an analgesic technique that is effective, is devoid of side effects, is intrinsically safe for the patient, and can be managed easily away from the hospital or surgery center. The goal of pain management should be to minimize pain not only at rest, but also during mobilization and exercise. This has increased the emphasis on multimodal techniques of providing pain relief. It is well recognized that opioid-related side effects including nausea, vomiting, drowsiness, dizziness, and constipation contribute to delayed recovery. Therefore, it is recommended that nonopioid analgesics (e.g., NSAIDs/COX-2 inhibitors and local anesthetics) should be used as the first line of treatment, or combine the use of NSAIDS/COX-2 inhibitors and narcotics instead of using narcotics alone.

COX-2 specific inhibitors avoid some of the side effects associated with the use of traditional NSAIDs. In order to provide optimal analgesia, it is imperative that these analgesics are administered on a regular "round-the-clock" basis to minimize the occurrence of breakthrough pain with, opioids used as "rescue" analgesics to provide for superior analgesia.

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CE/CME Objectives

After participating in the CE/CME activity, the participant will be able to:

- identify the reason for increased popularity of nonsteroidal anti-inflammatory drugs (NSAIDs);
- list the result of multimodal analgesia techniques for postoperative pain management;
- identify the difference between traditional NSAIDS and COX-2 specific inhibitors;
- list the result of administration of COX-2 specific inhibitor prior to surgery;
- describe parecoxib.

CE/CME Questions

To earn CE/CME credit for this issue of *Same-Day Surgery Reports,* please answer the questions below. Compare your answers with those printed at the bottom of this page and review any missed questions, then submit the enclosed evaluation form in the envelope provided.

1. Multimodal analgesia techniques for postoperative pain management:
   A. Increases the incidence of side effects.
   B. Increases postoperative morbidity.
   C. Improves postoperative analgesia.
   D. Consists of combining different groups of nonsteroidal anti-inflammatory drugs (NSAIDs).

2. Increased popularity of nonsteroidal anti-inflammatory drugs (NSAIDs) in the management of postoperative pain is because:
   A. NSAIDs are available over the counter.
   B. NSAIDs are cheaper than other analgesics.
   C. NSAIDs have shorter duration of action.
   D. NSAIDs enhance the quality of analgesia and reduce opioid requirements.

3. Compared to traditional NSAIDs, COX-2 specific inhibitors:
   A. Provide superior postoperative analgesia.
   B. Do not affect the platelet function.
   C. Are associated with increased incidence of gastrointestinal side effects.
   D. Are less expensive.

4. Administration of COX-2 specific inhibitor prior to surgery:
   A. Improves postoperative analgesia.
   B. Increases perioperative complications.
   C. Increases perioperative opioid requirements.
   D. Does not improve postoperative analgesia.

5. Parecoxib:
   A. Is a new oral COX-2 specific inhibitor.
   B. Is a prodrug that is converted to rofecoxib by the liver.
   C. Is an injectable COX-2 specific inhibitor.
   D. Increases the incidence of perioperative bleeding.

Answers: 1. C; 2. D; 3. B; 4. A; 5. C