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MAY 2015 Vol. 39, No. 5; p. 49-60

## INSIDE



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AHC Media

# Culturing protocols devised for duodenoscopes to prevent CRE

*An ideal protocol, however, may call for more of the expensive scopes*

*By* ***Gary Evans,*** *Executive Editor at AHC Media, publisher of* Same-Day Surgery

Responding to a series of outbreaks of carbapenem-resistant Enterobacteriaceae (CRE) linked to duodenoscopes, the Centers for Disease Control and Prevention (CDC) has developed an interim protocol for culturing the devices before use to create a greater margin of safety for patients.

But as others have noted, the approach is not foolproof and could be costly if facilities determine that they must purchase more scopes to adopt the protocol. Duodenoscopes are priced in the $40,000 range, according to researchers who came up with a similar protocol at the ECRI Institute in Plymouth Meeting, PA. The CDC protocol provides a plan to determine how scopes may be sampled and how to test the samples in a lab. *(To access the protocol, go to http://1.usa.gov/1MwdevG.)*

" ... THE FAILURE TO GROW BACTERIA FROM THE AREAS SAMPLED MAY NOT GUARANTEE THAT THERE ARE NO BACTERIA PRESENT ANYWHERE ON THE SCOPE." — MICHAEL BELL, MD, OF THE CDC

"Like other proposed solutions to the problem of duodenoscope-related CRE infections, we recognize that there are both pros and cons associated with using screening cultures," **Michael Bell**, MD, deputy director of the CDC's Division of Healthcare Quality Promotion, said in



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SAME-DAY SURGERY

***Same-Day Surgery®***,
ISSN 0190-5066, is published monthly by
AHC Media, LLC
One Atlanta Plaza
950 East Paces Ferry Road NE, Suite 2850
Atlanta, GA 30326.

Periodicals Postage Paid at Atlanta, GA 30304 and at additional mailing offices.
GST Registration Number: R128870672.

**POSTMASTER:** Send address changes to:
SAME-DAY SURGERY
P.O. Box 550669
Atlanta, GA 30355.

**SUBSCRIBER INFORMATION:**
Customer Service: (800) 688-2421.
customerservice@ahcmedia.com.
www.ahcmedia.com

**SUBSCRIPTION PRICES:**
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a blog post. "There can be concerns about cost, as using this method will mean that the duodenoscopes will not be available for use while waiting for the results of the cultures. This could mean that a facility would need to buy additional scopes in order to be sure they have the equipment available when needed. Additionally, the failure to grow bacteria from the areas sampled may not guarantee that there are no bacteria present anywhere on the scope."

The CDC continues to work with the Food and Drug Administration (FDA), medical specialty societies, and other endoscope experts to develop a more long-range solution. The various partners are working to determine which duodenoscope models are potentially affected; evaluate duodenoscope cleaning, drying, and disinfection; and assess the feasibility of using microbiologic sampling cultures to evaluate a facility's duodenoscope cleaning methods and identify if bacterial contamination remains after disinfection, Bell said.

## ECRI Institute has an idea

The ECRI Institute, a highly respected independent research group, also stepped forward with a solution that will allow the medically necessary procedures to continue at considerably less risk to patients. The problem is that ERCP (endoscopic retrograde cholangiopancreatography), which is performed on some half million U.S. patients annually, poses a risk of transmission of CRE because the bug has found a way to survive in intricately designed, hard-to-clean duodenoscopes. The scopes are primarily used for ERCP.

The ECRI Institute advises, in a nutshell, not to use the duodenoscopes until they culture negative. ECRI issued a Hazard Report (https://www.ecri.org/resource-center/Pages/Superbug.aspx) that details the method, which would keep these important procedures available to patients at reduced risk of a CRE infection. In addition, ECRI recommends that facilities conduct regular CRE surveillance through duodenoscope culturing, regardless of which reprocessing method they use (e.g., high-level disinfection using a liquid chemical germicide or sterilization using ethylene oxide). This step could be done in many ways, but until further culture recommendations are available, ECRI recommends different approaches. One is to culture every duodenoscope after

## EXECUTIVE SUMMARY

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- The ECRI Institute advises not to use the duodenoscopes until they culture negative. ECRI issued a Hazard Report that details the method.
- On March 26, the Food and Drug Administration issued a safety communication to alert users of the TJF-Q180V duodenoscope of new, validated manual reprocessing instructions.

reprocessing is completed and wait to release the cultured scopes until negative results are received. Culture incubation typically takes up to 48 hours. "We believe this will provide the highest assurance of preventing CRE infections," ECRI reported.

The problem is that this approach might require increasing

## If they're so difficult to reprocess, why are duodenoscopes approved for surgery?

*By **Joy Daughtery Dickinson**, Executive Editor*

With all of the difficulties in cleaning duodenoscopes, and the potential for outbreaks of carbapenem-resistant Enterobacteriaceae (CRE), some outpatient surgery managers are questioning why these scopes are approved by the Food and Drug Administration (FDA).

"While the design of the elevator mechanism has raised concerns over the years about the cleanability of these specialized scopes, until recently there has been somewhat limited evidence that duodenscopes are not being effectively reprocessed when performed according to recommended methods," says **Chris Lavanchy**, engineering director of the Health Devices Group at ECRI Institute in Plymouth Meeting, PA.

With the recent CRE outbreaks, providers and others have become aware that even if the devices are properly processed, that is no guarantee that they are free of microbes, Lavanchy says.

"Because CRE bacteria are relatively rare, and because infections associated with the bacteria can have a high mortality rate, the reports of CRE outbreaks associated with duodenoscopes have served as the figurative 'canary in the coal mine' and alerted the healthcare community that concerns about being able to adequately reprocess duodenoscopes may be warranted," he says.

However, the benefits outweigh the risks, some sources say. **Jennifer Corbett Dooren**, a press officer at the FDA, says, "Duodenoscopes are critical to diagnosing and treating severe, often life-threatening diseases."

Dooren points out that the devices have been used for decades and are used for endoscopic retrograde cholangiopancreatography (ERCP), which is the least invasive method used to treat blockages of the biliary and pancreatic ducts.

"Hundreds of thousands of patients with very serious conditions benefit from this important, life-saving procedure," she says. "The risk of developing multidrug resistant bacterial infections following ERCP is low, whereas patients may encounter serious health risks from not receiving necessary treatment."

Lavanchy concurs. "To put this into perspective, approximately 500,000 ERCP procedures are performed in the U.S. annually, and only a handful of CRE infections have been associated with the use of duodenoscopes each year," he says. "So while the consequences of CRE infections can be very severe, the prevalence is very low."

However, the FDA is reviewing validation data from each manufacturer marketing duodenoscopes in the United States, which includes FUJIFILM, Olympus, and Pentax, Dooren says. The FDA also is reviewing analysis of medical device reports, collecting information from manufacturers, interacting with the Centers for Disease Control and Prevention, obtaining information from the facilities where outbreaks occurred, and conducting an evaluation of the medical literature.

"In addition, the agency conducted an engineering assessment of the device, leading us to believe that the design of these duodenoscopes creates significant challenges for reprocessing," Dooren says.

### RESOURCE

- Transcript of media briefing on *Federal officials announce next steps on reprocessing of reusable medical devices, including duodenoscopes.* March 12, 2015. Web: http://www.fda.gov/NewsEvents/Newsroom/MediaTranscripts/ucm434110.htm. ■

duodenoscope inventories by two- or three-fold. Because few facilities will have the luxury of stocking enough scopes to have a few idle awaiting culture results, plan B would be to culture scopes weekly, starting at the end of the day Friday so the bacteria may grow over the weekend.

"This will not provide the high degree of assurance that culturing after each reprocessing cycle provides," ECRI notes. "It also bears the risk of unknowingly using contaminated scopes between culturing intervals. However, weekly culturing will be less likely to require increases to duodenoscope inventories. It will also limit the risk of potentially exposing a large number of patients to contaminated scopes as compared to less frequent culturing."

If a duodenoscope culture is positive, ECRI recommends repeating reprocessing using your standard method and re-culturing the instrument. If this next reprocessing results in a positive culture, consider sending the duodenoscope back to the manufacturer for further assessment or retiring it.

Notify your infection preventionist of all positive CRE cultures, ECRI advises. If you get positive cultures back on more than one scope, consider the possibility of a CRE reservoir in the reprocessing equipment or other sources, ECRI notes.

## FDA issues safety update

One specific model of duodenoscopes made by Olympus does not have a 510(k) clearance, but the FDA has said providers should not cancel procedures based on the fact that Olympus has a pending 510(k) application for the device (the TJF-Q180V) and continues to market the product while the application is under review.

On March 26, the FDA issued a safety communication to alert users of the TJF-Q180V duodenoscope of new, validated manual reprocessing instructions. *(To access the instructions, go to http://1.usa.gov/1917Odx.)* The high-level disinfection procedure and pre-cleaning step can be put in place immediately. The new manual cleaning instructions can be implemented when a new brush becomes available. At press time, Olympus anticipated shipping the new brush no later than May 8, 2015. **Jennifer Corbett Dooren**, an FDA press officer, says, "The FDA decided to issue the safety communication now, before the brushes are available, so that facilities can adopt the new high-level disinfection steps immediately and begin training their reprocessing personnel."

Removing the device from the market could lead to a shortage of duodenoscopes to meet U.S. clinical demand, the agency said. According to the advisory, the agency has received, in the past two years, 75 reports involving possible microbial transmission from all reprocessed duodenoscopes, including multidrug-resistant bacterial infections.

"The FDA's analysis indicates that the reported duodenoscope-associated infections have occurred in patients who have had procedures with duodenoscopes from all three manufacturers," the agency said. "At this time, FDA has no evidence that the lack of a 510(k) clearance was associated with the infections."

Also, the FDA has issued final guidance for makers of reusable duodenoscopes and other reprocessed medical devices aimed at ensuring that their cleaning and disinfection or sterilization instructions consistently reduce microbial contamination. *(Joy Daughtery Dickinson, Executive Editor of* Same-Day Surgery*, contributed information to this story. To see the final guidance, go to http://1.usa.gov/1L2Gi0H. For information about why the devices haven't been removed from the market, see story in this issue. For more information on duodenoscopes, see "FDA says to inform patients about risk of endoscopy linked to CRE infections," April* SDS*, p. 45. )*

### RESOURCE

- **ECRI Institute CRE and Duodenoscope Resource Center.** There is no charge to use this resource. Web: http://bit.ly/1EhdkDF. ■

# System made changes to stop 'no authorizations'

**Janice "Mae" Williams**, manager of precertification at Memphis, TN-based Methodist Le Bonheur Healthcare's Centralized Services Division, recalls having a "wow" moment during the first week of January 2015. Insurance carriers had put into place more requirements before issuing prior authorization for surgical and diagnostic procedures.

"The rules get more stringent each year," Williams says. "What amazes me is we can go to the insurance company's website and do exactly what it says, only to be denied and have them say, 'We haven't updated our website yet.'"

Such denials sometimes can be successfully appealed, but this appeal process requires a large amount of rework. "We've challenged a lot of

them, and some insurance companies will not pay retroactively," Williams says. "They are now saying, 'If you don't get the precert on the front end, I'm sorry, that's your loss.'"

Here are some changes the healthcare system has made to prevent clinically related denials:

**• Staff obtain approval for implants or medications that might be used during surgery, if these require separate precertifications.**

Increasingly, payers are requiring authorizations for specific medications or for implants used during a surgical procedure. To prevent denials, employees now attempt to obtain approval before surgery for items that potentially could be used.

"We now get the authorizations on the 'possibles,' so these will be covered if they're used," Williams says. "We also instructed the scheduling team that if any implant is involved, to name it on the front end."

**• The surgical team quickly notifies case management of any changes or additional procedures.**

In some cases, precertification was obtained for the patient's surgery, but additional procedures were done during the surgery that weren't anticipated. This change results in the entire claim being denied. **Vicki Boyd**, director of the centralized services division and former director of patient access services at Methodist University Hospital, says, "If you miss a couple of those, it can be devastating to your bottom line."

Quick notification that additional procedures were done avoids many denials. However, some have slipped through because the surgical team didn't notify case management in a timely manner. "We found that all of those occurred on the weekend," says Boyd. "We are trying to bridge that communication gap."

**• The precertification team notifies the surgical team, patient access, and case management if precertifications are not in place by noon the day before surgery.**

"That gives us the next four hours to get the precertification," says Boyd. "It also lets case management, surgery, and patient access know that the surgery may need to be moved to later in the day."

**• Staffing is increased as needed to obtain precertifications.**

In some cases, staff members scramble to obtain required authorizations before the close of business, Boyd says. "We make sure to staff appropriately to meet those timeframes," she says. "We have a committed team of precert specialists who will do whatever it takes to get that precert secured."

Staff members sometimes stay later, come in earlier, or work on a Saturday or holiday. "The good of the patient always comes first," says Boyd. "But without appropriate reimbursement, we could not stay in business to provide that service."

**• Patient access asks physicians to have a "peer-to-peer" conversation with the payer's physician if a high-dollar claim is denied for clinical reasons.**

Prior to giving approval, the patient's carrier might ask the physician to do a peer-to-peer conversation if a high-dollar claim shows the potential of being denied for non-substantiated clinical reasons. "Or the provider can request a peer-[to-]peer to push the procedure through," says Williams. "In talking to another clinician, they may decide that the care is appropriate and approve it." ■

# Evidence of economic burden of disparate care for minorities continues to grow

A recent tragic case involving informed consent obtained from parents with limited English proficiency led to a successful lawsuit against the hospital. The parents were told the risks of surgery for their child included kidney damage, but there was no interpreter in the room.

"The child ended up on dialysis for the rest of his life. The parents sued, and the hospital settled for $12 million in a matter of weeks," says **Thomas A. LaVeist**, PhD, director of the Johns Hopkins Bloomberg School of Public Health's Hopkins Center for Health Disparities Solutions. "This is a tragedy on so many levels — not only for the family, but also for the hospital, the surgeon, and the people served by the hospital," says LaVeist.

Social justice is an obvious reason to care about health and inequalities. "But that's not the only reason why this matters. There is a utilitarian argument as well," LaVeist says. "It is expensive to pay out claims of that type or to have people be sicker than they should be."

Eliminating health disparities for minorities would have reduced

direct medical care expenditures by $229.4 billion for the years 2003-2006, according to a 2011 study.[1] "If we don't get a handle on health disparities, the implications are far bigger than social justice," says LaVeist, the study's lead author.

Clearly, more is being done now to address disparities, says **Augustus A. White**, III, MD, PhD, director of the Culturally Competent Care Education Program at Harvard Medical School in Boston. White is author of *Seeing Patients: Unconscious Bias in Health Care*. "So in that sense, there's progress, but not in the sense of epidemiological studies that show disparities that were once noted are gone," he says.

Under the Affordable Care Act (ACA), adds White, "more people are insured. That's an important issue, because it means people are likely to have some kind of care." Also, the National Center on Minority Health and Health Disparities, created in 2000, was re-designated as the National Institute on Minority Health and Health Disparities under the ACA. "So it has more clout, and hopefully will be more effective in diminishing disparities," says White.

However, some have little confidence that the ACA will lead to a decrease in health disparities. Those skeptics include **Cynthia Jones,** PhD, associate professor of philosophy and director of the Pan American Collaboration for Ethics in the Professions at The University of Texas — Pan American in Edinburg. "Health disparities are the result of a complex tangle of factors, and despite decades of attention and research, we have yet to see movement in these disparities," Jones says. "Dumping more money into high-cost care is unlikely to affect change."

Reducing disparities is "an extremely complex issue," says White. "Healthcare itself is so complex, with many variables: policies, politics, human behavior and technology. All of those things are very formidable problems."

There is an obligation to do whatever you can to diminish healthcare disparities, says White. This obligation includes approaching hospital leaders.

"Ask CEOs and chiefs of services if there is a place for some specific institutional engagement on disparities," he says. "The issue is it's not ethical to penalize people for being in some particular group by providing care that is less good."

To address healthcare disparities, consider doing the following:

**• Train healthcare providers in communication methods that increase trust and lead to increased health literacy of the patients.**

"Historical inequities have resulted in lack of trust, which can impact health outcomes," says Jones. "Providers can attempt to mitigate trust issues through stressing culturally competent care."

**• Include questions about disparities in patient satisfaction surveys.**

"People are trying to explore ways to provide feedback to physicians, so they can learn if they are thought to be culturally competent," says White. Physicians with poor feedback can obtain training to improve their cultural competence, he says.

**• Help clinicians to be aware of their own biases.**

Disparate care often occurs unintentionally. "Everyone has biases. The bias is only a problem if it impacts behavior," says LaVeist. "Awareness might help people to check themselves."

**• Raise the issue of disparate care during committee meetings.**

Committees can unknowingly make decisions that have a differential impact on patients based on their race, ethnicity, or income status. "Someone needs to be in a position to say, 'What is the impact of this on the vulnerable populations that we serve?'" says LaVeist. "Often, there is no one making that observation."

**• Bring financial costs to the attention of leaders.**

If healthcare facilities are viewed as unfriendly to minorities, this view will affect their market share negatively. "With the expansion of Medicaid comes a whole new market of paying customers who previously didn't get care or got uncompensated care," says LaVeist. "Why wouldn't you want to get their business?"

## REFERENCE


1. LaVeist TA, Gaskin D, Richard P. Estimating the economic burden of racial health inequalities in the United States. *Int J Health Serv* 2011; 41(2):231-238. ■


# Day surgery patients registered at the bedside

At Children's Healthcare of Atlanta at Egleston, patient access recently switched to bedside registration at the hospital's 30-room day surgery department. Improving patient satisfaction was the biggest motivating factor for this change, says patient access manager **Michelle H. Crumbley**, CHAM.

Because they are a children's facility, one or two parents come to surgery with the child. "Our waiting area seats approximately 50," Crumbley says. This waiting area is also the waiting area for inpatient

surgeries.

"During our busiest days, folding chairs are brought out, and we have families waiting out by the elevator," she explains. With limited space, there wasn't enough privacy during the registration process.

"Patients are now brought directly back to their assigned room," says Crumbley. "Patient access comes to them." This process is used:

- Upon arrival, patients are greeted by a registration coordinator and are signed in.
- The Day Surgery team provides a list of the day's room assignments to the greeter.
- A patient care assistant brings the patient back to a room. "Once in a room, they can now be more comfortable. The child can even lay down or watch TV," says Crumbley.
- Registrars use a wheeled computer to register the patient, collect out-of-pocket costs, and obtain signed consent forms.
- An electronic status board lets physicians and nurses know the patient is in a room.

"Registration turns a light on above the door, once they are finished" to alert clinical staff that they can now come into the room to begin treatment, says Crumbley. "We've seen many benefits from this process," she says. "We have brought together patient access and nursing."

When registration was done in the waiting room, patient access and clinical staff had no contact with one another.

"But our impact on each other was huge," says Crumbley. "We now share in a common goal, and our teamwork shows."

Physicians now can see their patients between surgery cases, since the patient is already in a treatment room. "Before, patients might have been sitting out in the waiting area waiting for registration," says Crumbley.

Family members are much less anxious and more comfortable being in a private room. "They are more willing to pay their copay in a private, relaxed environment," she says. "And patient access staff feel more a part of the clinical team caring for the patient."

Customer service scores, registration wait times, surgery first start times, and turnaround times are all being measured. Because the process started in January 2015, little data is available. "But even without these numbers, the success is evident by walking out into the waiting room," says Crumbley. "There are no more folding chairs and no long waits."

There is no increase in pre-op time for registration, she says. "Vitals and weight can be done prior to registration, and the nurse can go ahead and start her prep with the patient while registration is taking place," Crumbley says. ■

## SDS Manager

# Can you offer total hips and knees in 23 hours? Yes!

*By* ***Stephen W. Earnhart****, MS*
*CEO*
*Earnhart & Associates*
*Austin, TX*

Want to shake it up a bit? Staff getting complacent? Profits sagging?

Start posting patients for knee and hip replacements! Furthermore, send them home in less than 24 hours directly from your surgery center. No 72-hour-stay facility is needed.

We've been doing total knee replacement for years in ambulatory surgery centers (ASCs) and sending patients home after 23 hours. It's common. Now, enter a new procedure: hips!

The level of excitement of adding these procedures to your daily schedule for the average surgery center is, well, phenomenal to say the least. The average facility does not start doing these right away without taking the right steps. Some of the major steps include:

**1. The right surgeon.** It takes a surgeon who is committed to making this work in a freestanding ASC. It truly takes an orthopedic surgeon who is very experienced, proficient in these procedures, and wants to move the patient from the hospital to the ASC to add this level of cost control and increased patient satisfaction over these cases.

**2. The right patient.** Patient selection is a large part of the process. From an acuity standpoint, we calculate that, on average, 20% of the patient base is not appropriate to have these procedures performed on an outpatient basis.

**3. Medicare approval list.** These procedures clearly are not on the Medicare approval list for outpatient surgery and, thus, no patients from federal payers are allowed. Sound familiar? We never thought we would be doing spinal fusions and laminectomies in our ASCs, and Medicare added nine spine cases for ASC reimbursement in 2015. So…

**4. Equipment.** Not a lot of extra equipment is needed for most facilities doing high-end orthopedic

cases, but significant surgeon-specific instrumentation is needed.

**5. Costs.** Implants are neither free nor cheap. Figure four to six grand for the knee or the hip.

**6. Profit.** The profits vary depending upon how you are set up with your contracts. Conservatively, the profits run about $13K after expenses for either procedure in network. Out-of-network payments are significantly higher.

**7. Time.** The average length of the procedure is about 45 minutes with a highly experienced surgeon.

**8. Training.** Patient training starts in the ASC before discharge. Staff training is a large part of the success of your program.

These are the high points. Talk to your ortho docs to gauge their interest, or start talking to orthopedists outside your facility. It's a great way to attract them! (*For more information on hip replacement, see "Hip surgery moves to outpatient arena — Shorter recovery with minimally invasive approach,"* Same-Day Surgery*, February 2004.)*

Next month: Are referrals drying up for your ENT, orthopedics, and other procedures? Has the local hospital been culling away your primary care referrals? Try creating your own referral base with a simple, but proven, method. *[Earnhart & Associates is a consulting firm specializing in all aspects of outpatient surgery development and management. Earnhart & Associates' address is 5114 Balcones Woods Drive, Suite 307-203 Austin, TX 78759. Phone: (512) 297-7575. Fax: (512) 233-2979. E-mail: searnhart@earnhart.com. Web: www.earnhart.com.]* ■

# Administering lorazepam for patients receiving general anesthesia questioned

Although sedatives often are administered before surgery, a randomized trial finds that among patients undergoing elective surgery under general anesthesia, receiving the sedative lorazepam before surgery, compared with placebo or no premedication, did not improve the self-reported patient experience the day after surgery, but was associated with longer time until extubation and a lower rate of early cognitive recovery, according to a study published in the March 3 issue of *The Journal of the American Medical Association* (doi:10.1001/jama.2015.1108).

Patients scheduled for surgery might experience considerable stress and anxiety. Benzodiazepine premedication is frequently used to reduce anxiety but also causes amnesia, drowsiness, and cognitive impairment. Treating anxiety is not necessarily associated with a better perioperative experience for the patient. More needs to be known about the efficacy of preoperative anxiety treatment to better counsel patients to make informed decisions, according to background information in the article.

**Axel Maurice-Szamburski**, MD, an anesthesiologist at the Hôpital de la Timone Adulte, Marseille, France, and colleagues randomly assigned 1,062 adult patients (younger than age 70) who had been scheduled for various elective surgeries under general anesthesia at five French teaching hospitals to receive 2.5 mg of lorazepam (approximately two hours before being transferred to the operating room), placebo, or no premedication. The perioperative patient experience was assessed 24 hours after surgery with a questionnaire.

The researchers found that premedication with lorazepam did not improve a measure of overall patient satisfaction compared with no premedication or placebo. Of the most anxious patients, no significant differences were found for overall patient satisfaction between the groups.

The time to extubation was significantly longer in the lorazepam group (17 minutes) than in the no premedication (12 minutes) and placebo (13 minutes) groups. Forty minutes after the end of anesthesia, the rate of patients scoring as recovered regarding cognition was significantly lower in the lorazepam group (51%) than in the no pre-medication group (71%) and the placebo group (64%). On postoperative day one, the number of patients with amnesia during the perioperative period was higher in the lorazepam group than in the other groups.

"Compared with placebo, lorazepam did reduce patient anxiety upon arrival to the operating room. Because there was no overall benefit from preoperative anxiety treatment, it is possible that anxiety arising upon arrival to the operating room does not influence overall patient satisfaction," the authors write. "The findings suggest a lack of benefit with routine use of lorazepam as sedative pre-medication in patients undergoing general anesthesia." ■

# One year after surgery, preoperative program to quit smoking still shows benefits

Patients receiving a brief intervention to help them quit smoking before surgery are more likely to be nonsmokers at one-year follow-up, reports a study in *Anesthesia & Analgesia*.

The simple, inexpensive program triples the percentage of patients with long-term smoking cessation at one year after surgery, according to the study by **Susan M. Lee**, MD, formerly of the University of Western Ontario, London, Canada, and her colleagues there. They write, "Anesthesiologists and perioperative providers have a unique opportunity to help patients achieve both short-term and long-term smoking cessation." Lee is now an assistant professor in anesthesia at the University of California San Francisco School of Medicine.

The researchers performed a follow-up study of 168 patients from a previous randomized trial evaluating a "practical intervention" to help smokers quit before surgery. Three weeks before scheduled elective procedures, one group of patients received the cessation program. The four-part programs consisted of brief counseling (less than five minutes) by a nurse, brochures on cessation, referral to a hotline, and a free six-week supply of nicotine patches.

Patients in the control group received usual care. As reported last year in *Anesthesia & Analgesia*, about 14% of patients in the intervention group were confirmed as quitting smoking before surgery, compared to just 4% of the control group. *(For more information on that study, go to http://bit.ly/1y1eRZO.)*

For the new study, Lee and colleagues performed follow-up interviews with 127 of the patients. One year after surgery, 25% of patients in the intervention group said that they were no longer smoking, compared to 8% in the comparison group. The patient reports were not confirmed by testing in the follow-up study.

> "UNDERGOING SURGERY CAN SERVE AS A 'TEACHABLE MOMENT' THAT MAY MOTIVATE PATIENTS TO ENGAGE IN PERMANENT SMOKING CESSATION."

On adjusted analysis, patients in the intervention group were three times more likely to be nonsmokers at one year. For every six patients enrolled in the program, one additional patient had achieved long-term smoking cessation. The effect remained significant, even assuming that all patients lost to follow-up continued to smoke.

Patients with lower scores for nicotine dependence were six times more likely to be successful long-term quitters. None of 22 patients with chronic obstructive pulmonary disease, a lung disease usually caused by smoking, were able to achieve long-term cessation, although this wasn't a statistically significant predictor. Smoking history in "pack years" also didn't predict one-year smoking status.

Patients who smoke are at increased risk of surgical complications, particularly problems with wound healing and breathing-related complications. Anesthesiologists commonly evaluate patients before surgery, which provides an opportunity to inform smokers about their excess risk and to encourage them to stop smoking before their operation.

"Undergoing surgery can serve as a 'teachable moment' that may motivate patients to engage in permanent smoking cessation," Lee and colleagues write. The original trial results found that the brief intervention increased the number of patients who quit smoking before surgery, at relatively low cost and without taking too much time away from doctors and nurses in busy preadmission clinics.

The new results show lasting benefits of the brief intervention, increasing patients' chances of being nonsmokers one year after surgery. Providing patients with nicotine patches to help them quit was a "vital component" of their program's success, Lee and colleagues wrote. They add, "Our study ... may serve as a call to action for governments and health insurers to take advantage of the teachable moment, and support more widespread funding of drugs for smoking cessation therapy around the time of surgery." *(For an abstract of the study, go to http://bit.ly/1HwNEDr.)* ■

# Study: Minimally invasive surgery could lower healthcare costs by hundreds of millions a year

A new analysis of surgical outcomes nationwide concludes that more use of minimally invasive surgery for certain common procedures can dramatically reduce postoperative complications and shave hundreds of millions of dollars off the nation's healthcare bill.

Results of the recent research, conducted by Johns Hopkins investigators and published March 25 in *JAMA — Surgery*, indicate that hospitals in the United States collectively could prevent thousands of post-surgical complications and save between $280 million and $340 million annually by using more minimally invasive procedures instead of traditional open surgery for routine operations of the appendix, colon, and lungs.

"Minimally invasive surgery, done in the right patients, represents an under-recognized opportunity not only for cost savings, but also for making surgery safer, reducing the very real suffering associated with surgical complications," says lead investigator **Marty Makary**, MD, MPH, professor of surgery at the Johns Hopkins University School of Medicine.

For the study, the research team analyzed more than 80,000 surgical cases from the National Inpatient Sample database. They tracked seven common post-surgical complications and associated billing charges for certain common operations. The procedures tracked involved operations of the appendix, colon, or lungs, selected because the traditional open and the minimally invasive approaches are considered standard of care.

While not all patients are candidates for minimally invasive treatment, the researchers note, the study revealed great variation in its use among those who do qualify, for similar patients treated at similar hospitals.

> "THE RESEARCH TEAM SAYS THE FINDINGS SHOULD BE HEEDED AS A CALL TO ACTION BY HOSPITAL LEADERS TO INCREASE CAPACITY FOR MINIMALLY INVASIVE TREATMENT.

To calculate the cost difference between traditional open and minimally invasive surgery, the investigators compared the actual cost for each patient who underwent traditional surgery against the estimated cost for the same patient undergoing minimally invasive treatment. In addition, the investigators calculated potential cost savings under two hypothetical scenarios:

- when all hospitals increased their use of minimally invasive surgery by 50%;
- when the hospitals performing the fewest such procedures, the so-called low utilizers, upped them to the level of hospitals performing in the upper one-third.

The tally showed that if all hospitals in the United States increased the number of minimally invasive procedures by 50%, they would avert 3,578 complications, reduce hospital stays by 144,863 days, and save $288 million a year. If hospitals performing the fewest minimally invasive operations boosted their levels to those of their higher-performing counterparts, the collective savings would be $337 million a year, 4,306 fewer complications, and 169,819 fewer hospital days.

The research team says the findings should be heeded as a call to action by hospital leaders to increase capacity for minimally invasive treatment and create a more streamlined division of labor so that surgeons with expertise in minimally invasive treatment can operate on patients who qualify for this approach. However, the authors caution that minimally invasive surgery is not always the optimal method of treatment. ■

## COMING IN FUTURE MONTHS

- New ways to evaluate whether patients are ready for surgery
- Response protocol for medication shortages
- Cost to treat a single seroconversion from a needlestick
- New minimally invasive procedure

# Nurses text, send images from the OR with new app

*App keeps parents up to date during surgery, eases tensions while they wait*

Just as one nurse gently placed a mask on 8-year-old Calvin Barr to administer anesthesia before his spinal surgery recently, another quietly stepped to the foot of the bed and snapped a photo of him with a smartphone. Calvin playfully squinted at the nurse with the phone, and through the clear blue mask, you could see a faint smile.

A few seconds later in a waiting room down the hall, Emily Barr's smartphone chimed with the indication that she'd received a text message. It was the photo the nurse had just taken of her son Calvin. After seeing it, Emily smiled herself.

Over the next three hours at Arnold Palmer Hospital for Children in Orlando, FL, Emily and her husband, Calvin Barr Sr., received a half dozen more texts. Some were just a sentence or two updating Calvin's status, while others contained photos or videos explaining exactly what doctors were doing during his surgery.

"I admit I wasn't sure about the idea at first," said Emily Barr, "but being able to get that information has been very good. We could see what was going on and constantly knew his status, and that's been very reassuring to us."

The Barrs are among the first to take advantage of a new app that feeds information from the operating room directly to the smartphones of a patient's family and loved ones. It's called EASE, which stands for Electronic Access to Surgical Events, and it is manufactured by Ease Applications in Orlando. The app is available in the Apple and Android app stores free of charge for families to download. Healthcare facilities pay a monthly subscription fee to implement the app, which has a tiered pricing structure based on hospital bed size. There is a separate pricing for a single surgical department within a hospital and also separate pricing for surgery centers, based on volume.

The app is designed to do what its name implies: ease the minds of those who are waiting and worrying about a family member who's undergoing surgery.

**Jonathan Phillips**, MD, the pediatric orthopedic surgeon who performed Calvin's operation, said, "Some of these procedures can go on four or five hours, and that can be really tough to deal with unless you're getting decent information all the time. This app has really made a huge difference in the way we communicate during surgery."

The app was developed by a pair of anesthesiologists in the cardiac unit of Arnold Palmer Hospital. "No matter how much we tried to reassure parents before surgery, we always got that same look of fear in their eyes as we took their children into the OR," said **Kevin de la Roza**, MD, co-creator of EASE. "We thought there's got to be a better way to communicate with them throughout this process."

De la Roza teamed up with **Hamish Munro**, MD, who knew privacy for the patient was just as important as the information they were hoping to share with loved ones. Munro said, "We use 256-bit encryption for all messages both in transit and at rest," which is the same level of security used in mobile banking transactions. "We also control user access, which means only the hospital can authorize people to use the app, and we all have special training to make sure we're in compliance with HIPAA," he said.

Also, like the popular photo-sharing application Snapchat, all messages and images sent through EASE are automatically deleted within 45 seconds.

For each operation, a circulating nurse is assigned a phone and is responsible for keeping track of the progress of the surgery and keeping the family informed. "We want it almost unnoticeable in the operating room," said Munro. "Actually, the circulating nurse is already responsible for updating the family. This is just a different way to do it."

## RESOURCE

- Ease Applications, 2715 Meeting Place, Orlando, FL 32814. Telephone: (407)-308-4399. Web: http://www.easeapplications.com. ■

## CNE/CME OBJECTIVES

After reading *Same-Day Surgery,* the participant will be able to:

- identify clinical, managerial, regulatory, or social issues relating to ambulatory surgery care;
- identifiy how current issues in ambulatory surgery affect clinical and management practices;
- incorporate practical solutions to ambulatory surgery issues and concerns into daily practices.

SAME-DAY SURGERY



# CNE/CME INSTRUCTIONS

To earn credit for this activity, please follow these instructions:
1. Read and study the activity, using the provided references for further research.

2. Scan the QR code to the right or log on to the AHCMedia.com site to take a post-test. Go to "MyAHC" and then "My Courses" to view your available CE activities. Tests are taken after each issue. First-time users will register on the site using the 8-digit subscriber number on their mailing label, invoice, or renewal notice.

3. Pass the online tests with a score of 100%; you will be allowed to answer the questions as many times as needed to achieve a score of 100%.

4. After successfully completing the test, your browser will be automatically directed to the activity evaluation form, which you will submit online.

5. A credit letter will be e-mailed to you instantly.

# CNE/CME QUESTIONS

**1. What con(s) is/are associated with using screening cultures for duodenoscopes, according to Michael Bell, MD, deputy director of CDC's Division of Healthcare Quality Promotion?**

A. Duodenoscopes will not be available for use while waiting for the results of the cultures.
B. A facility might need to buy additional scopes to ensure it has the equipment available when needed.
C. The failure to grow bacteria from the areas sampled might not guarantee that there are no bacteria present anywhere on the scope
D. All of the above.

**2. At day surgery for Children's Healthcare of Atlanta at Egleston, registrars use a wheeled computer to do which of the following at the bedside?**

A. Register the patient
B. Collect out-of-pocket costs
C. Obtain signed consent forms
D. All of the above

**3. A randomized trial found that among patients undergoing elective surgery under general anesthesia, receiving the sedative lorazepam before surgery, compared with placebo or no premedication, did what, according to a study in the March 3 issue of *The Journal of the American Medical Association*?**

A. Did not improve the self-reported patient experience the day after surgery
B. Was associated with longer time until extubation
C. Was associated with a lower rate of early cognitive recovery
D. All of the above

**4. Which of the following is true of patients who received a brief intervention to help them quit smoking before surgery, according to a study in *Anesthesia & Analgesia*?**

A. They are more likely to be nonsmokers at one-year follow-up
B. They are less likely to be nonsmokers at one-year follow-up.
C. They are equally likely to be nonsmokers at one-year follow-up.