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AUGUST 2009

VOL. 16, NO. 8 • (pages 85-96)

Michigan collaborative slashes radiation for cardiac CTs in half

Researchers say model can be replicated in virtually any hospital

A collaborative of 15 hospitals in Michigan, which included cardiologists and radiologists working side by side, has succeeded in cutting the radiation dose for CT angiography on average by more than half for almost 5,000 patients with no effect on image quality. The study, supported by Blue Cross Blue Shield of Michigan and Blue Care Network, was published in the June 10 issue of the *Journal of the American Medical Association*.

Participating hospitals included Beaumont Hospitals; Borgess Medical Center; Henry Ford Hospital; Hillsdale Community Health Center; Lakeland Regional Health System; Marquette General Health System; Mercy Health Partners-Hackley Campus; Mercy Memorial; Oakwood Hospital; St. John Hospital and Medical Center; St. John Macomb; St. John Oakland; St. John Providence Hospital; Sparrow Health System; and the University of Michigan Health System.

Data for the radiation-reduction project were collected on 4,995 patients at hospitals in the Advanced Cardiovascular Imaging Consortium, which was organized in 2006. "Blue Cross and Blue Shield and Blue Care work together with the medical community to decide if a program merits support," explains **Marc Keshishian**, MD, vice president & medical director of clinical affairs for the Blue Care network. "Dr. [Gilbert L. Raff, MD, a

Key Points

- Hospitals work together to determine best practices.
- Limiting scan range is one of key protocols for reducing risk.
- Heart beats are monitored so that radiation is only used when heart is at rest.

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Beaumont cardiologist] came to us, suggested we develop a collaborative, and we worked together to develop it.”

Keshishian says that seven such collaboratives are currently under way in Michigan in breast cancer, general surgery, geriatric surgery, angioplasty, peripheral vascular disease, and open heart or cardiac surgery, with varying numbers of participants. “Each time, we invite hospitals or physician groups to participate and each one makes a decision as to whether they want to participate,” he explains.

The “Blues,” he continues, do not receive hospital-specific data. “We believe that by having the hospitals work together, they can

understand and work to develop best practices in these areas,” Keshishian states. “Information is reported to a central location; that location evaluates the data and each hospital receives their own and every other hospital’s data, but all that data is blinded except their own. That way, they can see how they compare to others; it opens up a dialogue that leads to best practices.” All of the collaborations, he adds, are designed “to improve care in the state of Michigan.”

Heart CT angiography, or coronary computed tomography angiography, has a 90% success rate in diagnosing heart disease, according to Beaumont, and is especially useful in identifying whether low-risk patients with symptoms have the disease. The scan’s high dose of ionizing radiation is a barrier to its widespread use, but the project participants were able to reduce the radiation dose by an average of 53.3%, to about the equivalent of three years’ background radiation. (This refers to radiation one would get from such sources as sunlight and radioactivity from the earth.)

Care required with radiation

When considering heart CT angiography — or any procedure requiring radiation, for that matter — great care must be taken, says **Duane Mezwa**, MD, corporate chair of radiology at William Beaumont Hospital. “First of all, you want to make sure every exam has a medical necessity; you certainly want to do it if it is indicated,” he says. “This involves proper patient selection.”

If the testing is necessary, he continues, you want to perform the study with the minimal dose possible that will still give you the diagnostic information you require. “We always push the envelope to try to strike that balance between the amount necessary to make the diagnosis and anything that is wasteful,” he says. “Technology is being used by manufacturers in creating safer machines, but those of us who are caretakers of radiation use as little as possible to get the results we want.”

But heart cancers are very rare; why such concern with CT angiography? “Not only is the heart being radiated, but there is scatter radiation in the rest of the body — such as breasts and lung tissue,” Mezwa explains. “One of our concerns, for example, is with young patients who come to the ED and have

Healthcare Benchmarks and Quality Improvement (ISSN# 1541-1052) is published monthly by AHC Media LLC, 3525 Piedmont Road N.E., Building Six, Suite 400, Atlanta, GA 30305. Telephone: (404) 262-7436. Periodicals Postage Paid at Atlanta, GA 30304 and at additional mailing offices. USPS# 0012-967.

POSTMASTER: Send address changes to *Healthcare Benchmarks and Quality Improvement*, P.O. Box 740059, Atlanta, GA 30374.

Subscriber Information

Customer Service: (800) 688-2421. **Fax:** (800) 284-3291. **E-mail:** customerservice@ahcmedia.com. **Hours of operation:** 8:30-6 Monday-Thursday, 8:30-4:30 Friday, EST.

Subscription rates: U.S.A., one year (12 issues), \$549. Add \$17.95 for shipping & handling. Outside U.S., add \$30 per year, total prepaid in U.S. funds. Discounts are available for group subscriptions, multiple copies, site-licenses or electronic distribution. For pricing information, call Tria Kreutzer at 404-262-5482. Missing issues will be fulfilled by customer service free of charge when contacted within one month of the missing issue date. **Back issues**, when available, are \$92 each. (GST registration number R128870672.)

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Editorial Questions

For questions or comments, call **Steve Lewis** at (770) 442-9805.

repetitive scans at the age of, say, 19. We're concerned about too many of them coming in for a cough receiving a CT scan for pulmonary embolism."

In the case of the current study, the drive to find this balance played out in three stages. "First, we let people scan in normal fashion," Mezwa shares. "Then we tried to do some education, did the intervention, then came back and looked at the results."

Risk-reduction protocols

How was the radiation dosage slashed so dramatically? The physicians introduced several different risk-reduction protocols. "For one thing, they minimized the scan range as much as possible," says Mezwa, noting that the radiation homed in more closely on the area of the heart. "In the past, it would have started higher and ended lower; we used more tight parameters," he says.

In addition, says Mezwa, the doctors tried to get the patients to be scanned when there were more optimal heart rates; lower rates yield better images. "They used an EKG to trigger when the radiation turned on or off. They wanted to do the scan at a certain part of the cycle — they wanted it instantaneous with the rest point," Mezwa explains. "This way, they were only doing it at a time when they were most likely to get diagnostic information."

The most important part of the protocol, says Mezwa, was a reduction in kilovoltage, or the amount of radiation energy used to try to get a diagnostic study. "It's analogous to a CT colonography; when compared with the radiology necessary for a regular abdominal CT scan, it is cut in half. Even though you are scanning the same basic area, you are looking for different things, so you do not need as much radiation," Mezwa explains. So, for example, the reduced amount of radiation in a CT colonography would still be diagnostic for the colon, but it wouldn't be adequate for the kidneys, liver, or pancreas.

"The same is true in the heart," Mezwa continues. "When you use a lower dosage and look at all the parts being irradiated, you can pick up additional findings that may have nothing to do with why you did the test — such as lung cancers. You will still see them with lower radiation, but you would have to bring the patient back for a diagnostic test at

the proper dose."

This could happen in about 10% of the patients, says Mezwa, but he asserts that this is an acceptable tradeoff considering how many patients will be spared an unnecessarily high dose of radiation.

Reducing future cancers

Keshishian says he is very excited about these findings. "Any radiation exposure can lead to cancer down the road; the more you are exposed, the more likely you are to develop it," he notes. "This approach will reduce the number of cancers in the future for those who receive such scans."

In fact, adds Mezwa, technology will enable even greater safety for patients. "We just bought three new CTs that will bring down the radiation to about one fifth of what we were able to achieve in the study," he says. "The equipment is moving faster than we can get these papers out."

However, he adds, Beaumont is just one of two or three facilities to deploy these new machines, which cost about \$2 million each. Some hospitals may *never* be able to afford such equipment. In that case, can they replicate what the Michigan doctors have accomplished?

"Absolutely," says Mezwa. "People could put these protocols into practice tomorrow. You just have to become diligent about examination doses, and find ways to employ lowers doses and still get diagnostic information. That ability is out there using the current equipment."

Reference

1. Raff GL, Chinnaiyan KM, Share D, Goraya TY, et. Al. Radiation Does From Cardiac Computed Tomography Before and After Implementation of Radiation Dose – Reduction Techniques. *JAMA* 2009;301(22):2340-2348.

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TJC issues report on tracking HCW hand hygiene

Approach depends on use of the data

The Joint Commission has issued a major new document on the difficult issue of assessing hand hygiene compliance by health care workers. We'll put the bottom line at the top: There are many approaches to solve the Achilles "hand" of infection prevention and none of them is a panacea.

"The first thing people have to do is decide why they are monitoring hand hygiene," says leading hand washing expert **Elaine Larson, RN, PhD, FAAN, CIC**, who chaired the expert panel that produced the 262-page document. "Just doing it to be in compliance with Joint Commission isn't a good reason. What are you going to do with the information?" she says.

For example, conducting random audits to check compliance over time may be good for internal purposes, but something more rigorous may be required if you plan to feedback results to staff. "The monitoring can actually be part of an intervention to change behavior," says Larson, a professor of pharmaceutical and therapeutic nursing at Columbia University in New York City. "If that's the case, then you have to monitor each unit where you want to do the intervention and give feedback. So, the main thing is to decide how you want to use it."

The Joint Commission continues to make hand hygiene a National Patient Safety Goal, requiring compliance with the evidence-based recommendations in the hand hygiene guidelines issued by the Centers for Disease Control and Prevention (CDC) in 2002. The problem many infection preventionists have, however, is meeting this 1A recommendation in the CDC guidelines: "Monitor health care workers' adherence with recom-

mended hand-hygiene practices and provide personnel with information regarding their performance."

To improve the situation, The Joint Commission sought out proven methods and strategies for monitoring hand hygiene compliance. The result is the rather ponderous — but no less important — report: "Measuring Hand Hygiene Adherence: Overcoming the Challenges."

No single method recommended

"It's not designed to recommend a particular approach, but it is an attempt to list the options for best practices depending on the reasons people want to monitor — either because they want to provide feedback or audit the effectiveness of strategies over time," Larson says.

The monograph is the product of The Joint Commission collaboration with many leading infection prevention groups, including the Association for Professionals in Infection Control and Epidemiology, the CDC, the Society for Healthcare Epidemiology of America, and the World Health Organization. Submissions were confidentially reviewed by an expert panel under Larson's direction, resulting in a wealth of case studies and hand hygiene adherence research.

"We actually had a pretty stringent assessment technique," Larson says. "We had an advisory group and developed a series of criteria that would designate that something would be of quality or not — things like evidence of reliability, training of staff, and a whole series of quality criteria. If the submission didn't meet those criteria, it was not included."

Difficult to sustain

Following effective hand hygiene practices has long been recognized as the most important way to reduce the transmission of pathogens in health care settings. Many studies, however, have shown that adherence to hand hygiene recommendations remains low and that improvement efforts frequently lack sustainability, the report states.

"In terms of sustainability, one of the criteria that we used was whether or not there was any evidence that the data had been used to improve the quality of care," Larson says. "One of the big problems is that people try something, it works for a while, but nobody

Key Points

- First, institutions should 'decide why they are monitoring hand hygiene.'
- Joint Commission report suggests strategies for tracking compliance.
- Three main methods for measuring compliance: direct observation, measuring product use, and conducting surveys.

looks back a few months later to see what is happening.”

There are three main methods for measuring hand hygiene performance, each of which has advantages and disadvantages:

- directly observing;
- measuring product use;
- conducting surveys.
- **Direct observation**

As the term implies, observation involves directly watching and recording the hand hygiene behavior of health care workers and the physical environment.

Direct observation of the hand hygiene behavior of health care workers is considered the “gold standard” of measurement methods. Observation allows you to see which hand hygiene products are used, the thoroughness of cleansing, the tools and techniques used for drying, the use of gloves — in addition, whether the staff are performing hand hygiene whenever there is an opportunity to do so, the report states. Perhaps the biggest disadvantage of that method is that it can influence the behavior of those who know they are being observed — the so-called Hawthorne effect.

“It is expensive to monitor [compliance], so you want to pick the most practical way that gives you the best information without spending a huge amount of money,” Larson says.

- **Measuring product use**

Measuring the amount of liquid soap, alcohol-based hand rub, and paper towels that health care workers use — and measuring the frequency with which they use these products — is an indirect way of estimating staff adherence to hand hygiene guidelines, the report states.

“If there’s good information on product use by unit, then one of the ways to be fairly efficient and inexpensive is just to count how much soap and sanitizer is used,” Larson says. “The problem is that many places don’t have data by unit by month, for example, so part of it is practicality. What is feasible in your setting?”

In addition, measuring product use does not reveal whether health care workers are performing hand hygiene when it is indicated or whether they are performing it correctly. Many factors contribute to making this measurement method prone to inaccuracy, including product waste or spillage, product use by patients and family members, and the borrowing of product between units, the report notes.

- **Conducting surveys**

Organizational culture issues, key strategies

It is important to investigate the reasons for nonadherence to hand hygiene guidelines before deciding on one or more improvement strategies, according to a new report by The Joint Commission and its partners. It also is useful to examine the organizational context of health care delivery, which may facilitate or inhibit adherence. Such organizational factors include:

- The facility’s physical capacity for making products available.
- The presence of written hand hygiene policies and procedures.
- The active involvement of leadership “from the top down.”
- The presence of role models.
- The degree of accountability for nonadherent staff.
- The presence of a culture of safety.
- The active involvement of staff in improvement efforts.
- The awareness and involvement of patients and families.

Staff hand hygiene practices can be improved through efforts such as:

- education;
- timely feedback;
- reminders;
- structured approaches to performance improvement.

The following organizations, which collaborated with The Joint Commission on this monograph, are good resource for information on improving the measurement of hand hygiene performance:

- The Association for Professionals in Infection Control and Epidemiology Inc. (APIC) (www.apic.org).
- The Centers for Disease Control and Prevention (CDC) (www.cdc.gov).
- The Institute for Healthcare Improvement (IHI) (www.ihl.org).
- The National Foundation for Infectious Diseases (NFID) (www.nfid.org).
- The Society for Healthcare Epidemiology of America (SHEA) (www.shea-online.org).
- The World Health Organization (WHO) (www.who.int/gpsc/en/index.html). ■

Surveys of health care workers, patients, and family members — conducted in person, over the telephone, or in focus groups — can yield information about perceptions, attitudes, and behavior related to hand hygiene, The Joint Commission reports. Through surveys, health care workers reveal what they know and think about hand hygiene, as well as whether and why they adhere to guidelines. Surveys can reveal whether health care workers' perceptions of their own hand hygiene behavior match the perceptions of patients and family members.

However, using surveys for self-reporting of hand hygiene behavior can be unreliable; health care workers tend to overestimate their adherence to guidelines when questioned and may inaccurately recall their past hand hygiene behavior, the report found.

Ultimately, no one approach fits all facilities, which have distinct institutional cultures that may determine success or failure of the various methods. Virtually all hospitals now have alcohol hand rubs in place, a product that was designed to ease compliance by hurried health care workers. There appears to be some perception of an overall improvement from the days of sinks and soaps, but the simple act of hand hygiene remains a complex problem.

"I think the problem with adherence is still pretty pervasive," Larson says. "It has really been slow in coming. There are pockets of success, but we are not really sure over the longer term."

Patient empowerment efforts, including The Joint Commission's Speak Up signs and posters, are thought by some to be a key to increased hand hygiene compliance. "There are some places that have had success in this 'partners in your care' idea and other places where it hasn't worked so well," she says.

"I think it depends on the culture of the hospital or organization. If there is a good organization climate where there is a fairly high level of trust among the staff — and it is presented as a way of partnering with patients — then I think it works. When there is any sense of suspicion about it or [concerns] about litigation, then I think it fails. It has to do with the culture of the place."

(Editor's note: The Joint Commission report, "Measuring Hand Hygiene Adherence: Overcoming the Challenges," is available on the commission's web site at: <http://www.jointcommission.org>.) ■

Compliance with verbal orders standards poor

Among the most challenging standards from The Joint Commission for the first half of 2008 was standard IM.6.50 — "Designated qualified staff accept and transcribe verbal or telephone orders." According to the organization, 40% of hospitals were not in full compliance. **(This standard is now in a new chapter, under "RC" as opposed to "IM." See the story on pg. 91.)**

This problem is not surprising to ED managers, who say the hectic pace in their departments can make compliance with this standard quite challenging. "In an emergency setting, you do not take care of one patient at a time; it's not a linear process," notes **India Owens**, MSN, CEN, director of emergency services at Clarian West Medical Center in Indianapolis. "It's a different world than, say, the inpatient world."

Owens offers this hypothetical situation: A patient is vomiting, and the doctor has ordered medication in written format. The nurse goes in to recheck the patient and sees he has continued to vomit. She seeks out the doctor, who is heading to another room where a second patient is having a heart attack. The nurse tells the physician the patient is still vomiting, and he says the dosage should be increased. "This is all done on the go," she says. "The nurse writes down or asks the doctor to write down the order when they get the chance."

This is not to say the "transcription" part of the standard is impossible to meet. Owens says she has devised solutions for paper-based and electronic systems. (Her department switched to computerized physician order entry [CPOE] about nine months ago.)

"Prior to the switch, we solved the problem somewhat by having a single sheet that was used by both doctors and nurses," she says. "On one side at the top was the physician order, and at the bottom was the nurse's sign-off."

With this system, she explains, if the nurse wrote the verbal order down, the doctor still had access to that same piece of paper to sign it, and vice versa. "In many places there are two different sheets of paper," notes Owens. "Here, the nurse could just hand the doctor the chart and say, 'Write it on the clipboard.'"

Now that the department has switched to

Key Points

- CPOE system helped hospital overcome transcription problems.
- Documentation is critical to success of compliance.
- Education also helps with compliance.

CPOE, “you would not have this problem as consistently with verbal orders because the system ‘forces’ the doctor to write,” Owens says. As soon as a nurse enters a verbal order, she explains, it flows to the physician’s inbox for him or her to sign. “If you set your system up well, it closes the gap on this problem,” Owens says.

A solid policy will address the issue of having only qualified personnel transcribe the orders, adds **Kathy Hendershot**, RN, ED clinical director at Methodist Hospital in Indianapolis. “We have a policy that verbal orders cannot be taken by anybody except a registered nurse employed by the hospital,” she says.

Documentation also can be a problem, Hendershot says. “It clearly starts with the policies and procedures within your organization meeting the standard; then, you ‘teach to the test,’” she says. Once the policy was written and rolled out, Hendershot says, it was “cascaded” through organization management. “It’s important to make sure the medical staff understands it,” she adds.

Because the hospital still is on a paper system, “unless it is an emergent situation — usually resuscitation — we tell nurses they can’t take a verbal order,” Hendershot says. “They know now that in case they need an order, they will carry a form with them and ask the physician to write it down.”

In cases where verbal orders are used, the nurse is required to call back the order to the physician. “Usually, we document the order on the chart as a read-back a verbal order, or RBVO, and the physician has to sign off on that,” she explains.

To help ensure compliance, Hendershot conducts a significant amount of education. “Within our department we’ve done inservices, unit meetings, posters, mass e-mails, and we’ve made it part of our National Patient Safety Goal education,” she says. **(Nurse managers also use random audits to track compliance. See the story, right.)** ■

Verbal orders placed in new chapter

The Joint Commission (TJC) has noted that its verbal order standard, IM.6.50, has been one of the more difficult to comply with, but “ED managers who now wish to brush up on that standard will have to look elsewhere,” says **Louise Kuhny**, RN, MPH, MBA, CIC, TJC’s senior associate director of standards interpretation.

“The information management chapter used to have two components — verbal orders and patient information — but we split out verbal orders,” she explains. “It really pertains to record of care; so, it is now in a new ‘RC’ chapter: RC02.03.07.”

The standard still addresses the same issues, Kuhny notes. “You need to have a policy that says who can receive verbal orders, and they must be authenticated within the time frame specified,” she says.

The latter requirement, she reports, leads to the great majority of requirements for improvement. “[The Centers for Medicare & Medicaid Services] put out a communication about 18 months ago that said if there are no pre-existing state regulations, the default is 48 hours,” Kuhny says. “A few states use 24 hours, which is particularly challenging, and others have 30 days; but the vast majority of states go to the default of 48 hours.”

What if an ED manager is not sure what the state requirement is? “I recommend they check with the quality folks in the hospital,” she replies.

How does Kuhny suggest ED managers ensure compliance? “You need to put systems in place to be sure to prompt providers to sign the order when they next see the patient, and the providers need to be diligent,” she advises. “You should put a reminder in your electronic system or a flagging system on your charts to remind the doctor or other allied licensed practitioner.” ■

Audits help manager track compliance

Nurse managers say they find chart audits extremely effective in tracking staff compliance with The Joint Commission’s standard on

verbal orders.

Kathy Hendershot, RN, ED clinical director at Methodist Hospital in Indianapolis, for instance, uses a random, generalized chart audit. **India Owens**, MSN, CEN, director of emergency services at Clarian West Medical Center in Indianapolis, also uses audits to track compliance. While Owens considers her compliance initiative to be a work in progress, she reports that compliance in her department has risen from 30% to about 75%.

"Any time there is a medical error in the ED, we check to see if there was a written or verbal order," Hendershot says. "If it is not signed, we will scrutinize it." If the order is documented as verbal, she will make sure it has been documented correctly.

"Also, we will routinely ask the staff if they understand what the policy is," Hendershot reports. "We will randomly select staff and ask if they understand what an RBVO [read-back verbal order] is. If they fail the test, we will go back and re-educate them."

This is not an easy "test," she says. "When we ask them what it is, they have to say, 'Read back for the correct answer,'" Hendershot explains. "When surveyors were coming along, they would ask them, and they'd say, 'Repeat back,' and we'd be 'dinged' on that clarification."

"The way we've done audits is through inpatient admissions: How many of them have their completed meds reconciliation form on their chart from the ED as they go upstairs," Owens explains. In addition, she says, "our secretaries scan every chart into a computerized medical record, and they double-check the charts [for medication reconciliation]. They have been empowered to 'slap nurses around' if it is missing." ■

Safely storing meds is problem for many

Providers continue to struggle with The Joint Commission standard to safely and properly store medications (MM.03.01.01), with 22% of ambulatory organizations and 34% of hospitals being noncompliant in the first half of 2008.

Additionally, medication errors are the fourth most common type of sentinel event, with 46 reported in 2008 and 11 already reported in

2009.

The standard "can be challenging because often lots of people forget, because the same-day surgery patient is, in general, healthy," says **Sophie Duco**, RN, associate director of standards interpretation, hospital accreditation, at The Joint Commission. For example, a hospital-affiliated surgery program might be off-site and not have experienced the same type of pharmacy involvement with medications that on-site programs have, she says. "Pharmacy will procure meds, provide policies and procedures, but may not visit those off-site facilities or may not visit them with any frequency," Duco explains. Such situations leave the outpatient surgery managers responsible for ensuring medications are stored appropriately in their area.

Ginny McCollum, MSN, RN, an associate director of standards interpretation at The Joint Commission, says that in terms of refrigerated medications, "you should have a mechanism to be able to monitor, not only daily when you're there, but when the organization is closed."

There are electronic digital monitoring devices for the medication refrigerator and tissue refrigerator so you know the temperature at all time, she says. "When you come in on Monday, you know was there a blackout, and there was 24 hours of lost temperature," McCollum says.

Inexpensive recording thermometers will indicate when a refrigerator temperature is out of range, Duco notes. "The key is that the staff must act upon that finding," she says.

Ensure that expired medications, including multidose vials, are removed, she says. "Managers forget to go back and round to make sure no expired meds are available," Duco says. "Lack of daily pharmacy involvement can be lost on staff already busy on patient care paperwork."

What happens to meds throughout the day?

Ensure that the organization has a policy to safely manage medication that might be gathered up by a particular provider at the beginning of his or her shift, Duco says.

For example, in outpatient surgery, an anesthesia provider might gather up medications for all of the day's cases. "The organization has to have a policy in place that addresses safe storage, safe handling, security, and disposition of

meds at the end of that person's shift," she points out.

The question arises, then, how will anesthesia providers manager their meds through they day? "If they have a lunch break, what do they do with those meds they gathered up?" Duco asks. It is critical not only that a policy be developed, but that the manager ensure the policy is implemented.

Also, with controlled substances, there are federal rules and regulations, as well as the facility policy to comply with, Duco says. "Many organizations have gone to [a policy that] you pull meds for one case at a time," she says. One added advantage of such a system is more accurate billing and disposition, Duco adds.

Also don't forget the crash carts, says **Michon Villanueva**, assistant director of accreditation services at for the Accreditation Association for Ambulatory Health Care. "Organizations periodically forget to check their crash card for expired medications," she says. ■

Items to check off for LSC compliance

There are many detailed requirements of Life Safety Code (LSC) compliance, and many outpatient surgery managers are not aware of them.

For example, all gas cylinders, including those not in use, must be stored in an enclosure of non-combustible construction in an ambulatory surgery center (ASC), says **William Lindeman**, founder and president of Tucson, AZ-based WEL Designs, which is a health care facility planning firm. Lindeman spoke on the LSC at the recent annual meeting of the Ambulatory Surgery Center Association.

"The walls, floors, ceilings, doors — hear me, doors — interior finished shelf racks, have to be noncombustible," he says.

About one-third of ASCs have wood doors on their gas closets and are out of compliance, warns Lindeman. "For some reason this has been missed by professionals for a very long time," he says. "It's a very common thing to find."

Architects will tell you that you are in compliance because you have a one-hour rated door, Lindeman says. However, "if it's a large system,

more than 3,000 cubic feet, has to be rated *and* noncombustible," he says. It is possible to obtain limited combustibile wood doors that meet the standard, but the least expensive way involves a metal door, he says.

Hospitals are allowed to have up to 300 cubic feet of oxygen, equal to 12 E cylinders. **George Mills**, MBA, FASHE, CEM, CHSP, senior engineer in the department of standards interpretation, The Joint Commission, says. "Any more than that needs to be in a room we call 'limited construction,' which includes a door with a closure and positive latching," he says.

Consider these other suggestions:

- **Conduct regular mechanical and electrical testing.**

"Basically, it is safe to assume you will need to test and document anything that is mechanical or electrical in your facility, and anything in any way related to safe reliable exiting of the building," Lindeman says. To maintain the exits in a multi-tenant building, "it is your job to walk down those stair towers regularly to make sure the doors on it are latching securely and they can be used as a safe, reliable exit," he says.

Your engineer should photocopy the parts of the NFPA documents that address operational features, "because it's only you who can make it happen," Lindeman says.

"There are requirements for flame and smoke readings and furnishings and curtains and things inside your facility you have to respect." There's even a limit on the size and number of trash cans, he says. The largest single trash can is 32 gallons. The largest storage of trash in any given room is half a gallon per square foot maximum, unless the area is protected as a hazardous space, says Lindeman.

"There's two ways to protect a room as a hazardous space: fully [fire] sprinklering it, or fire rating it," he says. "So, if you're in a fire sprinklered building, you don't have to worry about the size of your trash containers any more."

Also, check for portable space heaters, which are forbidden in patient care areas, Lindeman says.

Fire extinguishers must be inspected every 30 days, he says. Ensure the fire extinguishers are located where they are supposed to be, make sure the instructions are facing out, and lift them to ensure they don't feel empty. "You need to examine for obvious damage and make sure the pressure gauge reading is in an accept-

able range," Lindeman says. "This is a monthly test I'm sure you all already are doing but remarkably, are seldom documenting." You should have a written procedure so you can document that you did it correctly, sources point out.

- **Conduct quarterly fire drills, one per shift in hospitals.**

Your written fire emergency plan must list steps, including the use and response of fire alarms and code phrase training, pull of the alarm to dispatching authority, isolation of the fire, evacuation of the immediate area, evacuation of the smoke compartment, maintenance of the overall building for evacuation, and ensuring the fire is extinguished, Lindeman says.

"When you find a fire, you need to set off the alarm immediately," he says. "If you can't set off the alarm, you need to use a code phrase the staff is trained to recognize." It could be code red that means "I found a fire, someone pull the alarm, because I can't right now."

"It's little, but it's missing from a lot of emergency plans you see out there," Lindeman says.

The lowest priority? The fire itself, Lindeman says. "That's the last thing you worry about when there's a fire, is actually putting it out," he says. ■

Put a stop to IV med errors with 4 practices

Intravenous (IV) drug errors are twice as likely to cause harm to patients as drugs given orally, according to new research from the American Society of Health-System Pharmacists (ASHP).¹

"The most important thing for ED nurses, given how busy and chaotic and distracting that environment can be, is to simplify and standardize everything they do as much as possible," according to **Bona E. Benjamin**, ASHP's director of medication-use quality improvement. Here are four of Benjamin's recommendations:

- Use standardized infusion concentrations of "high-alert" medications.

"You don't have to remember, 'For this concentration, I use this rate, or that tubing, or that bottle,'" says Benjamin. "Since there is less to remember, there is less opportunity for error."

- Standardize the storage of IV medications.

"If all the crash carts have all the meds on the same location on every crash cart, it makes it easier to find things when you are in those true emergencies," says Benjamin.

- Use ready-to-use infusions at the point of care.

The goal is to minimize the nurse having to mix anything at the bedside. "We strongly encourage using something you can just grab off the shelf and give, rather than having to mix it," Benjamin says.

- Put resources such as dosing calculators and rate charts "in every treatment bay, so you can have them when you need them," says Benjamin.

Reference

1. Proceedings of a summit on preventing patient harm and death from IV medication errors. *Am J Health-Syst Pharm* 2008; 65:2,367-2,379. ■



Transparent purchasing could improve quality

In a joint letter sent to President Obama and House and Senate leaders, the Premier health-care alliance and GYNHA Ventures Inc., the Greater New York Hospital Association's supply chain enterprise that includes group purchasing organizations (GPOs), said that hospitals could improve health care quality and achieve cumulative savings of \$317 billion if certain policies are enacted to create a more competitive and transparent purchasing environment. The savings are based on an analysis conducted by the two groups and projected over 10 years, to be fully realized by 2019.

"Through our work, we have learned firsthand that sizable savings can be achieved without compromising patient care," said Susan DeVore, Premier's incoming president and CEO, in a prepared statement. "These savings will serve as a down-payment to help our nation pay for com-

prehensive health care reforms that improve quality, affordability and access to care.”

“Quite simply, we do not believe that health-care supply costs need to increase,” added GNYHA Ventures President Lee Perlman.

“Through sound policy and a commitment to transparent purchasing practices, group purchasing organizations can contribute significantly to slowing the growth of healthcare spending.”

Specifically, savings opportunities identified by Premier and GNYHA Ventures include:

- **Improved alignment between physicians and hospitals** — Allowing shared savings programs would align hospital and physician financial incentives to achieve greater consistency and standardization of medical products, which would improve the quality of care and provide more value to health care purchasers. If properly structured, 2%-4% a year of the approximately \$57 billion that is spent annually on physician preference items, such as cardiovascular, orthopedics, spine, intraocular, ophthalmic, ear, and other devices, could be saved through improved physician and hospital alignment, yielding 10-year cumulative savings of \$68-\$128 billion.

- **Removal of price confidentiality contracts** — Publicly disclosed prices would provide hospitals with the necessary information to engage with physicians in making informed, evidence-based decisions, while tracking outcomes to ensure quality of care. The power of this type of collaboration is evident in the \$36 billion in annual savings achieved through hospitals and clinicians working with GPOs to aggregate supply purchasing and improve systems and processes that maximize efficiency, labor, and expenses.

- **Implementation of unique device identification** — The creation of a national unique device identification (UDI) system is a large, critical piece to fully recognizing savings and improving patient safety. According to a recently updated Efficient Consumer Response study entitled “Improving the Efficiency of the Healthcare

Supply Chain,” \$16 billion in annual savings are projected from the adoption of universal product numbers and the identification of standards for electronic data interchange and bar coding.

- **Comparative effectiveness research** — Comparative effectiveness research will lay the foundation to produce information that will help health care providers and patients evaluate medical innovations and determine which represent added value, which fail to offer enhancements to current choices, and which treatments work for some patients and not for others.

- **Transparency in payments to physicians by manufacturers** — Requiring manufacturers of drugs, devices, and medical supplies to publicly report financial relationships with physicians would help expose payments that could create conflicts of interest.

- **FDA evidence-based oversight of reprocessing** — The FDA currently provides oversight and regulates the reprocessing of single-use devices (SUDs). Despite FDA regulation, many hospitals do not reprocess SUDs because of the single-use label. The FDA could require manufacturers to show evidence that a medical device is unable to be reused, including studies that indicate reuse would render the device unsafe.

- **Allowing follow-on biologics** — Granting manufacturers of biologic products a set number of years of market exclusivity, similar to one that makers of traditional drugs already have. The Congressional Budget Office estimates that would produce a savings of at least \$5.9 billion (\$6.6 billion if increased tax revenues are included) over 10 years. ▼

Sebelius challenges hospitals to fight HAIs

At a speech before the United Nurses of America’s 12th National Nurses Congress, Health and Human Services (HHS) Secretary

COMING IN FUTURE MONTHS

■ Hospital doubles its patient satisfaction ratings

■ Staff support includes formalized mentoring programs

■ Nation’s top hospitals recognized for outstanding patient care

Kathleen Sebelius discussed two new HHS reports on the quality of health care in America and challenged hospitals to work to reduce health care-associated infections (HAIs). Published by the Agency for Healthcare Research and Quality, the annual 2008 National Healthcare Quality Report and 2008 National Healthcare Disparities Report indicate that patient safety measures have worsened and that a substantial number of Americans do not receive recommended care. Upon issuing the reports, Sebelius also announced the availability of \$50 million in Recovery Act resources to fight HAIs and improve patient safety.

"Today's reports show why we can't wait to enact comprehensive health reform," said Sebelius. "The status quo is unsustainable and we cannot allow millions of Americans to continue to go without the care they need and deserve."

The reports found that:

- 40% of recommended care is not received by patients.
- Only 40% of diabetic patients received three recommended diabetic preventive exams in the past year, and this rate has not improved over time.

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- Only half of obese adults and children are given advice to exercise more and eat a healthy diet.
 - Seven out of 10 adults with mood, anxiety, or impulse disorders received inadequate treatment or no treatment at all.
 - Disparities in health care persist. Minority patients receive disproportionately poor care compared to Caucasian patients. At least 60% of quality measures have not improved for minorities compared to Caucasians in the past six years.
 - One in seven hospitalized Medicare patients experience one or more adverse event.
 - Patient safety measures have worsened by nearly 1% each year for the past six years.
 - Central line-associated blood stream infections strike hundreds of thousands of patients each year.
- Sebelius also called on hospitals across America to commit to reduce central line-associated blood stream infections in intensive care units by 75% over the next three years. She challenged hospitals to make use of a proven patient-safety checklist that can significantly and dramatically reduce the rate of these life-threatening infections.
- To read the reports, go to: www.ahrq.gov/qual/qrd08.htm. To read the checklist referenced by Secretary Sebelius, go to: www.ahrq.gov/qual/clicklist.htm. ■