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The future is now: Patients are consumers in a new era of hospital infection prevention

"The choice of infection control is something every CEO should make."

— **Lisa McGiffert**, director of the Safe Patient Project at the Consumers Union, publisher of Consumer Reports

For better or worse, the era of consumer-driven infection prevention arrived when the March 2010 issue of *Consumer Reports (CR)* hit the newsstands.

All the caveats and concerns about whether infection rate disclosures will lead to unintended consequences were more or less rendered moot. For starters, there's a guy on the *CR* cover snowboarding out of giant TV screen. Boxed teasers along the top of the cover promise reports inside on vacuum cleaners, interior paints, and yes, "Hospital Germs: Hidden Dangers." Inside, under the more ominous title "Deadly Infections," are data from 10 states that are publicly reporting central line-associated bloodstream infections.¹ Hospitals were cited by name, some honored for achieving zero infections and others identified for having some percentage below or above — in some cases, way above — the national average. One gets the sense, infection preventionists, that we're not in Kansas anymore.

"This is the first stream of data that we have [put] out there," says **Lisa McGiffert**, director of Consumers Union's Safe Patient Project. "We have been working around the country on these infection rate-reporting laws, and pretty much every state is starting with bloodstream infections in the ICU. Our intent at the *Consumer Reports* Ratings Center is to continue to update this on a quarterly basis and bring in the states that weren't included in all data sets. This is a beginning."



Lisa McGiffert

The article is a paradigm step beyond the "dirty little secret" hospital infections exposé many a veteran IP has seen suddenly appear in his or her local newspaper. This is something completely different, the beginning of ongoing national infection

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rate disclosures that may finally close the loop between the patient — uh, the consumer — and the hospital “C-suite.”

Some of the hospitals with higher rates immediately issued caveats and qualifiers — arguments about old data, the severity of patient illness, and the like — but this is clearly the future, albeit a work in progress. The Yonkers, NY-based Consumers Union — publishers of *CR* — has the clout in the marketplace to completely alter the way hospital executives perceive infection prevention.

‘Public is going to make this happen’

“We felt it was important for people to see in this article that many hospitals have reached the goal of zero when it comes to bloodstream infections in ICUs, and that is an achievable goal,” McGiffert tells *Hospital Infection Control & Prevention*. “We also believe it’s very important to call out the low performers. We’re not alone in that. There are other [quality] experts that have talked to us about the importance of doing that.”

Indeed, nobody in a position of authority wants to see that “don’t buy” dark moon symbol next to a picture of their hospital instead of

a toaster. The symbols actually weren’t used in the infection rate report, but you don’t need a weatherman to know which way the wind is blowing. The point is, consumer-patients understand and trust *CR*, which will influence their purchasing decisions in health care as it has on every other product and commodity. The key for infection prevention programs is to be positioned as the answer to the problem.

“Every single day, the leaders of hospitals choose what to spend their money on,” McGiffert says. “Sometimes they chose to raise salaries for the highest-level administrators, build a parking lot, or add a wing that is going to bring in more money. The choice of infection control is something every CEO should make. It is a fundamental issue of safety. I think the public is going to have to be the group that makes this happen — that demands that it happen.”

Kathy Warye, CEO of the Association for Professionals in Infection Control and Epidemiology (APIC), immediately seized on this point when the *CR* issue hit the streets.

“Prevention can only occur when top leaders target zero as their goal, invest in their infection prevention programs to assure the resources



Kathy Warye

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needed for optimal programs — including resources necessary to track, monitor, and publicly report these infections — and make infection prevention and control everyone’s job across the institution,” she said in a statement. “Health care leaders must understand that the cost of infections erodes the bottom line, and they need to allocate the resources to infection prevention making it an institutionwide priority. At a time when these deadly infections still present a risk to patients, infection prevention departments at health care facilities need to be growing, not shrinking. Unfortunately, a 2009 APIC survey showed that 41% of hospitals in the United States are cutting staff, resources and education for infection prevention in response to the economic downturn.”

‘A giant step’

In a concession to the widespread influence of the popular American consumer magazine, other major infection groups immediately issued largely supportive statements. Joining APIC were the Society for Health Care Epidemiology of America (SHEA) and the Centers for Disease Control and Prevention. **(See related story, p. 29.)**

“We have to take a step back and realize how quickly CDC, SHEA, and APIC all came out with press releases on this,” says **William Jarvis**, MD, a former leading CDC hospital outbreak investigator who is now a private epidemiology consultant for Jason and Jarvis Associates in Hilton Head, SC. “If we go back to say, 2002 or so, when the Consumers Union first started pushing for this — *nobody* was for it. This is a giant step in the right direction. Are there limitations to it? Absolutely. Can we improve it? Absolutely.”



William Jarvis

The *CR* data are from hospitals that publicly report their central-line bloodstream infection rates as a result of state laws and hospitals that voluntarily report to the Leapfrog Group, a Washington, DC-based nonprofit that works with large employers and purchasers of health care to measure and publicly report on hospital quality. There are now infection rate disclosure laws in 27 states, and 17 of the states have

published that information, the report noted.

“The state reports and the Leapfrog reports have been out there, but what we did is put it all together and present it in a way that people can understand,” McGiffert says. “That’s the element that has been missing. And we are doing it in a way that reaches people. Often these state reports are buried on some web site. I hope it will help call attention to the fact that some hospitals are doing a better job than others, and it will have an impact on [infection prevention] resources.”

Central-line BSIs cause at least 30% of the estimated 99,000 annual hospital infection-related deaths in the United States and add an average \$42,000 to the hospital bill of each ICU patient infected, the report states. Though it did not tie it directly to the infection rates reported, the *CR* article also takes hospitals to task for not adopting the highly publicized central insertion checklist developed by Peter Pronovost, MD, PhD, and colleagues at Johns Hopkins.²

Used by clinicians to ensure aseptic technique during catheter insertion, the checklist has become one of the more well-known aspects of a program that is frequently cited as proof that health care-associated infections (HAIs) are preventable rather than inevitable. **(See *HIC*, October 2008, p. 113.)** Last year, U.S. Department of Health and Human Services Secretary Kathleen Sebelius called on hospitals to use the checklist to reduce their rates of central-line infections in ICUs by 75% over the next three years. However, implementation of the checklist is going slowly, particularly in states that don’t have rate disclosure laws, the *CR* report states.

“We don’t really have widespread information about which states are using the bloodstream infection checklist, but we feel that it is important for the public to know that zero is not impossible,” McGiffert says. “That’s why we brought the Pronovost checklist in. There are still too many hospitals that don’t have a well-coordinated, organized, comprehensive, resourced infection control department. That’s what it takes. This involves everyone that works in the hospital — the doctors, the CEOs, the CFOs.”

In the report, which used 2008 data or the most recently available, *CR* listed “bottom performers” such as North General Hospital in New York City, which had a central line-associated bloodstream infection rate 394% higher than the national average.

The findings were “out of date and presented a misleading snapshot of our hospital,” **Samuel J. Daniel**, MD, CEO of North General stated in a letter shared with *HIC*. “Here are the most recent facts. North General only had three central-line bacterial infections in 2009 — with none in the third quarter [latest data available].”

For its part, *CR* stands by its report and findings, but McGiffert concedes that “old data” are a recurrent issue, and there should eventually be better analytical tools available than the “standardized infection ratio” used for the report. **(See related story, p. 30.)**

“Every time we come out with something like this, there are always [complaints] that ‘you got it wrong; the data are old,’” she says. “Of course, the data are always old, which is a major issue that we have to work on. I know that people at *CR* are going back to look at the data, but these issues have come up even on process measures.”

Also citing old data and recent improvements was Regional Medical Center in Memphis, TN, which *CR* reported had a central-line BSI rate 238% higher than the national average. Interestingly, in making the point to *HIC*, an epidemiologist at the facility underscored the importance of the burgeoning consumer advocacy movement to infection prevention.

“We’re not sure where they got the 238% — and we saw a rather dramatic drop in 2009 — but all this reporting is very good,” says **Mack Land**, MD, an infectious disease physician at the hospital. “It certainly focuses the attention of leadership and the board on infection prevention. We get a little boost out of that, and it makes everybody, individually in each unit, realize that this reporting is going to continue and we need to get in line. Our goal is zero central-line BSIs or as close to that as we can get.”

Amid these invigorated quests for zero, there remains the lingering question of whether this public disclosure will translate to pressure not to report infections.

“I have heard anecdotally from infection preventionists that now the CEOs are aware that they should be at zero, they are demanding zero but they are not coming forth with the money [to improve the program],” McGiffert says. “You have to put your resources toward something you want to happen.”

Jarvis feels state legislatures missed an opportunity by not requiring specific resources as infection rate disclosure laws were enacted.

“It’s been very disappointing that not a single one of those pieces of [state] legislation required an increase in infection control personnel to do it,” he says. “Basically, they’re telling IPs to do more with less or static resources. The other thing I have certainly heard as I consult around the country are reports of gamesmanship about definitions. [For example], not calling it a catheter-related BSI until the patient is out of the ICU, so it really doesn’t count. If you’re sitting at zero for six months, you really don’t want one.”

Concurring was **William Schaffner**, MD, chairman of the department of preventive medicine at the Vanderbilt University Medical Center in Nashville, TN.

“As we in infection control go out to each of the units, they want to quibble about these infections because they make them look bad,” he says. “Rather than having unit personnel focus on what they can do to prevent infections, we find them fighting about the ‘report card.’”

Reiterating the point that all personnel must be involved in day-to-day infection prevention, Schaffner says the *CR* report and the era of transparency it heralds must be met with a new attitude in hospitals.

“We in medicine have to adopt a new mindset, particularly about bloodstream infections in ICUs,” he says. “Peter Pronovost has now shown us that this checklist, rigorously applied, works — it drives down infection rates. There are hospitals that haven’t even thought about that yet, let alone implemented it. If something like this [*CR* report] grabs the attention of people who have power and the authority to insist on the implementation of good infection control practices, we are on the right road — though there may be a lot of bumps.”

(Editor’s note: For more information on the hospital listings in the CR report go to www.ConsumerReportsHealth.org.)



William Schaffner

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1. Deadly infections: Hospitals can lower the risk but many fail to act. *Consumer Reports*. March 2010; pp. 16-21.

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SHEA: Time for national HAI reporting standard

'National standard [could] ensure validated data'

The report recently released by *Consumer Reports (CR)* on infection rates in health care facilities highlights the importance of transparent public reporting, but a national system is needed to replace the variety of state approaches, the Society for Healthcare Epidemiology of America (SHEA) said in a statement.

SHEA supports public reporting as part of a comprehensive strategy to eliminate health care-associated infections. Such data should stimulate immediate and sustained action by health care facilities to improve adherence to evidence-based prevention practices — the basis for checklists, innovative prevention programs, and other strategies — that can yield measurable improvements and indeed, elimination of HAIs, the Society reported.

"As leaders in the field of infection prevention and control, SHEA members are deeply committed to the need for establishing a national standard of reporting for HAIs," SHEA said.

In 2006, SHEA, the Infectious Diseases Society of America (IDSA), and the Association for Professionals in Infection Control and Epidemiology (APIC) jointly published model legislation and a toolkit outlining recommendations for design of public reporting programs at the state level. (**See *Hospital Infection Control & Prevention*, March 2007, p. 29.**) These recommendations focused on creating standardized definitions of health care-associated infections, ensuring validated data and supporting the use of the Centers for Disease Control and Prevention's National Health Safety Network (NHSN) as a backbone for surveillance and public reporting. The NHSN is a surveillance system that allows HAI data to be tracked, analyzed, and shared to maximize prevention efforts. Currently, 28 states have implemented public reporting laws, 21 of which utilize NHSN for their reporting requirements

"We are pleased that nearly half of the states have adopted laws similar to this model," SHEA

said. "However, SHEA believes it is time for a national standard that can ensure validated data and comparisons that accurately portray infection rates across geographic and health status-based risk categories. Such attention must be paid to ensure that patients and health care facilities have comparable information and that the focus remains on continuous improvement at each facility. A national standard will give all of us involved in the delivery of patient care — including the patient themselves — data for action that drives our progress toward elimination of HAIs."

CR embraces suggestion

CR initially resisted federal reporting laws — favoring states as "laboratories" to find the best methods — but now that so many states are reporting data to the NHSN, the framework for a national system is in place, says **Lisa McGiffert**, director of Consumers Union's Safe Patient Project.

"That has been a really nice evolution of addressing this problem," she says. "The CDC will have a lot of better information of what is happening out there. We definitely support a national system now, and it definitely should be through NHSN. We have learned that there is quite a bit of support at the federal level for a national reporting system, and we will continue to work on making that happen."

Indeed, the CDC stressed in a statement issued in light of the CR report that "public reporting of infection rates are an important component of eradication efforts." Research shows that when health care facilities are aware of their infection issues and implement concrete strategies to prevent them, rates of certain hospital infections can be decreased by more than 70%, the CDC stated.

"Eliminating health care-associated infections is a top priority for CDC," said **Denise Cardo**, MD, director of the CDC's Division of Healthcare Quality Promotion. "The tracking and reporting of health care-associated infections is an important step toward health care transparency. Infection data can give health care facilities, patients, and public health agencies the knowledge needed to design and implement prevention strategies that protect patients and save lives."

HAIs are not only a problem for individual health care facilities — they represent a public health issue that requires many people and

organizations to work together in a comprehensive effort to attack these “largely preventable” infections, the agency said. As a result, the CDC is working with partners and states to implement infection prevention tools and increase their use of the agency’s NHSN.

However, there are some troubling questions about the rapid expansion of NHSN and its dramatically emerging role in a national infection rate reporting system, cautions **William Jarvis**, MD, a former leading CDC hospital outbreak investigator who is now a private epidemiology consultant for Jason and Jarvis Associates in Hilton Head, SC.

The current NHSN is based on the old CDC National Nosocomial Infection Surveillance (NNIS) system, which was comprised of a few hundred hospitals rather than the 2,000-plus that are now reporting to NHSN as required by their state laws. Yet even IPs voluntarily participating in the NNIS system out of a desire to provide benchmarks and improve quality still had some problems matching definitions to infections, he notes.

“Those were highly interested people who really cared about the quality of the data,” Jarvis says. “Now we have majority of hospitals reporting [to NHSN] solely because they have to. What is their level of interest in making sure they have high-quality data that is validated? And will CDC do to ensure it is validated data? Is it just garbage in and garbage out?” ■

Are CR data accurate? Variables may confound

‘We are still at the very early stages of reporting’

Beneath the general praise *Consumer Reports (CR)* received for publishing hospital infection rate data and bringing the importance of infection prevention to the forefront, there is a lingering question in the mind of many a health care epidemiologist.

“A lot of people are wondering, how good are the data on which these ratings are based?” says **William Schaffner**, MD, chairman of the department of preventive medicine at the Vanderbilt University Medical Center in Nashville, TN.

The CR data are from hospitals that publicly report their central-line bloodstream infection rates as a result of state laws and hospitals

that voluntarily report to the Leapfrog Group, a Washington, DC-based nonprofit that works with large employers and purchasers of health care to measure and publicly report on hospital quality. Since the risk of infection varies substantially across different types of ICUs, CR used a “standardized infection ratio,” taking into account the unique mix of ICU types in a given hospital by comparing the hospital infection data for each ICU to the national averages for each such ICU type published by the Centers for Disease Control and Prevention.

For example, CR explained, the average infection rate for cardiac ICUs nationwide is 2 per 1,000 central-line days (the total number of days that patients are on central lines), while surgical ICUs average 2.3 infections per 1,000 central-line days. So, an infection rate 100% above average would be 4 per 1,000 days for a cardiac ICU, but 4.6 per 1,000 days for a surgical ICU.

“I don’t know if the standardized infection ratio is going to be the measure that is going to be used [in the future], but it was a formula that we felt had some validity to use to compare across hospitals,” explained **Lisa McGiffert**, director of Consumer Union’s Safe Patient Project. “The way this information is typically reported in the states is pretty incomprehensible from the public’s point of view. They report it by all these different kinds of ICUs, which means something to epidemiologists but is less meaningful to the public. We really needed to figure out how to bring this information together in a way that is understandable and the standardized infection ratio is the best thing we found out there.”

Though conceding it is something of work in progress, McGiffert expects refinements and improvements as public infection rate reporting continues.

“We are still at the very early stages of reporting this information, and it’s going to get better,” she says. “Until you get it out there and try different ways to deliver the information, you’re not going to learn better ways to do it.”

One problem with the standardized ratio is that it relies on historical data that may not reflect recent interventions, notes **William Jarvis**, MD, a former leading CDC hospital outbreak investigator who is now a private epidemiology consultant for Jason and Jarvis Associates in Hilton Head, SC. In addition, any surveillance system is dependent on the rigor of its application and the parameters of infection definitions used, he observes.

“Obviously, as anyone in infection prevention

knows, there are some cautions with these data," Jarvis says. "One, you've got different people applying definitions. I have been surprised that [infection definitions] I thought were clear cut were misinterpreted. So there are certainly variations between infection preventionists in applying the definitions."

Another factor to keep in mind is that a simple change in infection definition can greatly affect infection rates, which may otherwise appear to be rising and falling based on the efforts or lack thereof of the participating hospitals.

The CR report used 2008 data or the most recently available. However, future comparisons will have to acknowledge that the CDC changed central-line infection definitions beginning in January 2009, Jarvis explains.

"The most common category reported — one positive culture for coagulase-negative staph in a patient that had a central line and received antibiotics — is no longer a catheter-related BSI," he says. "So by definition, if you do absolutely nothing, your infection rate will probably decrease by at least a third."

More information about interventions and other variables such as the average duration of catheterization is needed to make meaningful comparisons, Jarvis adds.

"If your hospital has an average duration of catheterization of two days, and mine is 20 days, my patients are at much higher risk," he says. "What kind of needleless connectors are being used? There is no mention of that at all and we know from a variety of studies now [that it matters] which one of those you use, and whether you have an IV team. How many people are manipulating [the line], what's used for disinfection, and how long do you use it — all of these impact on BSI-rates."

One solution is to go beyond mere numbers and report process measures that are being used. The CR report moves in that direction by citing poor adherence to a highly regarded catheter insertion checklist, but in doing so conceded that the information is not reported in any systematic way. "We need to go beyond the absolute number [of infections] and find out more what is going on out there," Jarvis says. ■

IPs should enforce mask use during spinal shots

Fatal Ohio case underscores transmission risk

A fatal meningitis infection in a pregnant woman in Ohio has been linked to an anesthesiologist giving shots into the spine without wearing a surgical face mask, a breach of current infection prevention guidelines, the Centers for Disease Control and Prevention reports.¹

Though transmission factors are not completely understood, the case appears to be another in which an asymptomatic health care worker transmits *Streptococcus salivarius* — a common oral bacterium — via droplets while administering an injection into the spine.

"This particular bacteria doesn't cause infections in the mouth — almost everyone carries it, and it doesn't cause us any problems," says **Jonathan Duffy**, MD, an investigator with the CDC's Epidemic Intelligence Service. "In that sense, the anesthesiologists are not infected, but [infection can occur] when it gets into some place where it is not supposed to be — like the spine."

The fatal infection in Ohio was actually part of a cluster, following close on the heels of

another pregnant patient who survived an identical infection after being administered anesthesia by the same provider. The CDC also reported a cluster of three similar cases in New York in 2008, emphasizing that the reports indicate health care workers are not likely following current recommendations that include wearing face masks when performing such procedures. **(See related story, p. 33.)**

Features common to all five cases included rapid onset (< 24 hours) of meningitis after anesthesia in previously healthy women and the association of each cluster with a single anesthesiologist who performed the procedures. In both clusters, *S. salivarius* most likely was transmitted directly from the anesthesiologist to the patients, either by droplet transmission directly from the oropharynx or contamination of sterile equipment, the CDC concluded. Droplet transmission of oral flora has been suggested as the most likely route of transmission in previous reports of clusters associated with a single health care provider.^{2,3} *S. salivarius* and other viridans group streptococci are the most commonly identified etiologies of meningitis after spinal procedures, accounting for 49% and 60% of cases in literature reviews.⁴

Although the occurrence of meningitis after spinal anesthesia is not new, the cases

described occurred after the June 2007 release of recommendations for the prevention of such infections by the CDC's Healthcare Infection Control Practices Advisory Committee (HICPAC).⁵ In response to several reports of meningitis following myelography radiographic imaging procedures that involved injecting a contrast material into the spine, HICPAC recommended surgical masks for providers who were either placing a catheter or injecting material into the spinal canal or epidural space.

Facilities at which those procedures are performed should raise awareness of these recommendations among staff members and assess compliance with the recommendations by performing periodic audits, the CDC urged.

"This message is actually for any health care providers that are performing injections and procedures on the spine," Duffy says. "That includes people from other specialties such as neurology, radiology, surgeons, and internists — a whole spectrum of people who may be doing injection procedures. These [cases] were related to anesthesia for childbirth, but it could be anesthesia for surgical cases. These recommendations would apply to anyone who is inserting a needle into or near the spine."

Health care providers who perform spinal procedures should be familiar with and follow the recommendations for use of masks, proper aseptic technique, and safe injection practices. In addition to wearing masks, these practices include using new sterile needles and syringes when accessing multidose vials and using single-dose vials whenever possible. The current level of compliance with these recommendations is an open question.

"We don't have any national statistics or percentages of how many people wear masks when they do these procedures," Duffy concedes. "As these case reports highlight, in Ohio, the anesthesiologist was not wearing a mask for these procedures. Clearly, even though these guidelines are out there, some people may not be aware of them and, certainly, some people are not following the recommendations. People should be aware of and adhere to these recommendations."

No surveillance changes have been enacted, but the CDC emphasized that local and state health departments are in the best position to help health care facilities identify and investigate cases or clusters of health care-associated meningitis and ensure adherence to infection

control recommendations.

"Our message to state health departments is that when they get reports of cases of meningitis with these organisms to be aware that it is a potential health care-associated infection and to pursue that line of investigation," Duffy says.

Baby survived

In Ohio in May 2009, a healthy woman, aged 26 (Patient D), was admitted to a hospital in active labor, the CDC reported. She received spinal anesthesia from Anesthesiologist B and delivered a healthy baby. Approximately 15 hours after receiving the spinal injection, Patient D experienced fever, nausea, and severe headache; a blood culture and diagnostic lumbar puncture were performed. The patient became lethargic and unresponsive and was airlifted to a tertiary care hospital approximately six hours after symptom onset. She subsequently recovered.

A second healthy woman aged 30 years (Patient E) was admitted to the same hospital in active labor three hours after Patient D. Patient E also received spinal anesthesia from Anesthesiologist B and delivered a healthy baby. Approximately 13 hours after receiving the spinal injection, Patient E experienced a severe headache, fever, confusion, and lethargy, and later became unresponsive. Blood cultures were drawn. Approximately six hours after symptom onset, she was airlifted to the same tertiary care hospital as Patient D; she died seven hours later. The cause of death was determined by autopsy to be suppurative meningoencephalitis caused by *S. salivarius*. Cerebrospinal fluid (CSF) was collected on autopsy. Blood and CSF cultures collected from both Patient D and Patient E revealed *S. salivarius*. Isolates from patients D and E were indistinguishable by pulsed-field gel electrophoresis (PFGE).

On the day after symptom onset in the two Ohio patients, the hospital, the local health department, the Ohio Department of Health, and the CDC initiated an investigation. Investigators cultured one opened anesthetic medication vial and three unopened vials, interviewed the hospital infection preventionist and medical director, and reviewed hospital intrapartum spinal anesthesia procedure protocols. Anesthesiologist B was found to be the only health care provider involved in the spinal procedures for both

CDC: Infection control breaks likely in NY meningitis cases

Anesthesiologist says mask was worn for injections

Case reports by the Centers for Disease Control and Prevention included the following details about three bacterial meningitis cases in postpartum women in New York:

In September 2008, a healthy woman aged 24 years (Patient A) was admitted in active labor to a New York City hospital.¹ She received combined spinal-epidural anesthesia from Anesthesiologist A, and delivered a healthy baby. Approximately 22 hours after receiving anesthesia, Patient A experienced headache, back pain, rigors, nausea, vomiting, and disorientation.

Within one hour of Patient A's admission, a second healthy woman aged 31 years (Patient B) was admitted to the same hospital in active labor. Patient B also received combined spinal-epidural anesthesia from anesthesiologist A and delivered a healthy baby. Approximately 21 hours after initiation of anesthesia, Patient B experienced headache, back and neck pain, and nausea. Cerebrospinal fluid (CSF) and blood cultures collected from both patients before the administration of antibiotics resulted in no growth. *Streptococcus salivarius* was identified in Patient A's CSF by polymerase chain reaction (PCR). Both women recovered without complications.

To determine whether other cases of health care-associated bacterial meningitis had occurred, the hospital conducted a six-month retrospective review among postpartum patients who received combined spinal-epidural anesthesia. A third case was identified in a woman aged 37 years (Patient C) who received anesthesia from Anesthesiologist A in July 2008. Patient C experienced headache, lethargy, confusion, and a possible seizure approximately 19 hours after initiation of anesthesia. *S. salivarius* was cultured from her CSF.

Two days after symptom onset for patients A and B, investigators conducted a site visit and did

active case finding. Cultures were taken of two bags of anesthetic medication for epidural infusion prepared using sterile technique under a laminar flow hood by the hospital pharmacy on the same date as the medication administered to patients A and B. The on-site review included spinal-epidural anesthesia procedure protocols, and interviews with the pharmacist and members of the medical staff and labor and delivery nursing staff.

Anesthesiologist A reported routine use of masks during spinal anesthesia procedures. Samples of the anesthetic medication were negative for bacteria by culture and DNA sequence analysis. Staff members reported that the presence of unmasked visitors in the room during spinal anesthesia procedures was common. Subsequently, the hospital reinforced policies and procedures to enhance hand hygiene and maintenance of sterile fields, and required the use of masks, gowns, and sterile gloves for staff members performing spinal anesthesia procedures. In addition, the hospital instituted new policies to minimize visitors and require masks for all persons in the room during spinal anesthesia. The hospital also initiated a program to monitor compliance with these policies.

In the New York cluster, *S. salivarius* was not isolated from the anesthesiologist, so a comparison could not be made with the bacteria identified from two of the three patients. However, the anesthesiologist was the only common exposure identified in the three cases, the CDC stated. The occurrence of meningitis caused by normal mouth flora after spinal injection procedures performed by a common provider suggests a breach in aseptic technique. Retrospective review of the procedures with the anesthesiologist did not reveal obvious breaches in aseptic technique; however, certain breaches (e.g., not wearing a mask properly during the procedure) might be difficult to identify retrospectively, the CDC noted.

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patients D and E. Because of initial concern that patients D and E potentially had meningococcal meningitis, Anesthesiologist B had been given ciprofloxacin as post-exposure prophylaxis approximately 12 hours after the patients' symptom onset. Cultures performed on swabs subsequently obtained from the oropharynx, buccal mucosa, and tongue of Anesthesiologist B resulted in no growth, but *S. salivarius* was identified using polymerase chain reaction (PCR)

methods. However, a PFGE pattern could not be determined for the *S. salivarius* carried by the Ohio anesthesiologist because the bacteria were identified by PCR instead of culture.

Culture and PCR of the medication vials revealed no evidence of contamination. Interviews with staff members revealed that anesthesiologists at the hospital did not typically wear masks while performing bedside spinal procedures, despite a hospital policy requiring

masks. In particular, Anesthesiologist B did not wear a mask while administering spinal anesthesia to patients D and E. With droplet transmission the most likely source, the hospital reinforced its policy requiring all staff members to use surgical masks when performing spinal anesthesia procedures. The clusters in Ohio in New York raise the question as to whether some providers are more likely than others to transmit infection.

"In these two clusters, there was a single health care provider that was associated with all of the different cases," Duffy says. "That leads us to believe that there is something that they do differently than their colleagues at the same institutions that may contribute to the infections. Some of these things might be 'operator-dependent,' in that some people work closer or farther away. Some people may talk more during the procedure. It has been noticed in previous reports that maybe someone who talks more is more likely to spread droplets during the procedures. There are all kinds of subtle factors."

The intrathecal space is entered during several diagnostic and therapeutic spinal procedures, including lumbar puncture, myelography, and spinal anesthesia, and can occur inadvertently during epidural anesthesia. Cases of meningitis have been reported after all of these procedures, although most published cases have involved spinal anesthesia. The actual incidence of meningitis after these procedures is not known.

"Meningitis cases that are due to these bacteria in our normal flora are not [routinely] reported to CDC, so CDC doesn't have specific numbers on how many cases might be occurring," Duffy says. "State health departments know more than we do; but as with any infections — as far as reporting goes — in general, we think that there fewer cases reported than actually occur."

In Sweden, one case of purulent meningitis occurred per 53,000 episodes of spinal anesthesia during 1990-1999.⁶ Post-spinal procedure meningitis causes serious infections; in one case series, one third of cases resulted in death.⁴

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APIC goes global with Murphy presidency

Right now, 1.4 million people have an HAI

A proud "Aussie" is the 2010 president of the Association for Professionals in Infection Control and Epidemiology (APIC), putting an international face on an organization that clearly wants to expand its global reach.

Cathryn Murphy, RN, MPH, PhD, CIC, MRCNA, currently holds an academic position on the faculty of health services and medicine at Bond University in Robina, Gold Coast, Queensland, Australia. She previously served as president of the Australian Infection Control Association and was a founding member of the Asia Pacific Society for Infection Control. As the first non-U.S. president of APIC, Murphy's election is a reflection of APIC's increasingly global focus.



Cathryn Murphy

"This is not about me as an individual," she tells *Hospital Infection Control & Prevention*. "I am someone who has been fortunate through 15 years of membership in APIC to learn so much about the profession from my colleagues. If I can do any one thing, it would be to show other international members of APIC that it is possible for them to follow a leadership pathway within the organization."

APIC always has been an international organization, Murphy emphasizes, noting that it has had increasing number of members from all around the world since it was first established.

"At the moment, among our 13,000 members we have more than 41 different countries represented," she says. "It fits very well with one of our strategic intentions, which is to advance the organization internationally."

In addition, APIC's scholarly journal — *American Journal of Infection Control* — had some 200,000 articles downloaded internationally last year. "People from more than 10 countries downloaded that material," Murphy says. "To me, it shows how important APIC's global footprint is. We are able to influence practice and it is all about that bidirectional exchange of information and ideas."

CNE/CME instructions

Physicians and nurses participate in this CNE/CME program by reading the issue, using the provided references for further research, and studying the questions. Participants should select what they believe to be the correct answers, then refer to answer key to test their knowledge. To clarify confusion surrounding any questions answered incorrectly, please consult the source material. After completing the semester's activity, you must complete the evaluation form that will be provided and return it in the reply envelope to receive a credit letter. ■

CNE/CME objectives

Upon completion of this educational activity, participants should be able to:

- Identify the clinical, legal, or educational issues encountered by infection preventionists and epidemiologists;
- Describe the effect of infection control and prevention issues on nurses, hospitals, or the health care industry in general;
- Cite solutions to the problems encountered by infection preventionists based on guidelines from the relevant regulatory authorities, and/or independent recommendations from clinicians at individual institutions. ■

That ability is critical in a global village where an infectious index case from one continent can cause a cluster somewhere else in the world on the same day. More specifically, health care-associated infections (HAIs) are taking on a global context, as strains of multidrug-resistant nosocomial pathogens spread via patients between countries.

"At this particular point in time — at this

CNE/CME questions

9. There are now infection rate disclosure laws in 27 states. How many of them are reporting to the Centers for Disease Control and Prevention's National Healthcare Safety System?
 - A. 17
 - B. 21
 - C. All of them.
 - D. None of them.
10. Though it did not tie it directly to the infection rates reported, the *Consumer Reports* article takes hospitals to task for not adopting the highly publicized central line insertion checklist developed by Peter Pronovost, MD, PhD, and colleagues at Johns Hopkins.
 - A. True
 - B. False
11. A fatal meningitis infection in a pregnant woman in Ohio was linked to an anesthesiologist giving shots into the spine without wearing:
 - A. gloves.
 - B. gown.
 - C. mask.
 - D. All of the above
12. According to the World Health Organization, at any particular moment in time how many people globally have a health care-associated infection?
 - A. 1 million
 - B. 1.4 million
 - C. 3.5 million
 - D. 1 billion

COMING IN FUTURE MONTHS

■ Full coverage of the landmark 5th Decennial infections conference from Atlanta

■ Preventing infections in newborns

■ The contaminated hospital room as a source of acquisition

■ New innovations in surveillance

■ MRSA is 50 years old: Where do we go from here?

minute — the World Health Organization estimates that at least 1.4 million people are suffering with an HAI globally,” she says. “A staggering figure.”

Among the many challenges is finding interventions that can be adopted by nation’s both rich and poor.

“The challenge certainly is global,” Murphy says. “APIC is in a unique position. We are the world’s largest [infection prevention] organization. We must take the science to the bedside.” ■

Correction

In the January 2010 issue of *Hospital Infection Control & Prevention*, the second continuing education test question was incorrectly worded. Question 2 should have read:

“In a recently published study, what percentage of the 89 surgical residents who sustained a needlestick injury did not report the injury to the employee health office?”

The answer remains **C. 47%**.

CNE/CME answers

9. B; 10. A; 11. C; 12. B.

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IP volunteers are paying it forward

'Giving back is our responsibility.'

By **Patti Grant**, RN, BSN, MS, CIC
Infection Preventionist, Dallas

When I was an *IP Newbie* back in January 1990, my manager insisted — literally *made me* — go to the monthly local APIC chapter meetings. Already out of my comfort zone at work, the thought of an environment that provided constant opportunity to feel even more uninformed and unintelligent — with witnesses nonetheless — was not appealing.



Patti Grant

After attending several meetings, the realization set in that everything was organized and perpetuated by volunteers. Those volunteers with full-time jobs managed to constantly give back, lead, and were excellent teachers willing to share almost anything.

Looking back, it seems the sinking feeling of “not knowing enough or being intelligent enough to participate” has never really left. There is always somebody smarter, more politically savvy, a better speaker/organizer, with better credentials, connections, and networking skills. I had to get over it, and just started volunteering. Consider this: *You* will always be smarter, more politically savvy, a better speaker/organizer, with better credentials, connections, and networking skills, than somebody else.

Contemplate, and then accept, that we each have a unique skill — possibly an unidentified passion — that will help spearhead our ability to volunteer and strengthen our profession overall. It is unfair *not* to share your talents with your peers through volunteerism, since the receiving of knowledge is the cornerstone of our ability to function in the complicated arena of infection prevention and control. Giving back isn't showboating. It is our responsibility to “pay it forward.”

Through many mentors and chance meetings at professional meetings, or while working on a committee or task force, I have received some excellent advice. Below are some of these pearls along with concepts I've learned while volunteering. (Apologies up front as I can't remember exactly who has shared what, but here it goes anyway):

- If you're standing in front of an audience, you are automatically the expert, and that fact alone will give you strength to prepare and provide.
- There's no shame in saying, “I don't know.” The shame is in not sharing that truth. Just state you will research whatever and get back to them.
- Even a rejection of a manuscript is worth the effort because you learn so much from the reviewers' comments.
- You don't have a right to complain if you are not part of the solution, so volunteer your time and get involved.
- Don't hide your talents. Embrace the obligation to encourage others.
- Just get over yourself and volunteer. If you wait until you are ready, it won't happen and you'll feel more isolated than you do now.

If you aren't fortunate enough to be near a group of infection preventionists that meet monthly, then consider sharing your talents outside your area of expertise. Local PTAs need speakers to present at their local meetings, as do church groups, “leadership academies” of local schools, and business groups. Think seasonal topics, such as food safety, in the summer or the importance of vaccinations before school starts. The bottom line is *you are a community resource*, and there is much to be learned through teaching and helping others, your peers included.

My first locally elected APIC position was secretary for the APIC-DFW chapter, and I vividly remember stuffing and licking 160 envelopes every month for two years to send out the meeting minutes. Was that fun? Absolutely not, yet it got me involved and networking, and realizing just how much I'd been missing out. So at the risk of preaching, just jump through the fear and get started volunteering because our free work is best: It decreases feelings of isolation when you realize everybody else has it hard, too. I sometimes remind myself of an anonymous quote somebody sent me years ago:

“Rejection spells failure only if you do not believe in yourself. For those who believe, it is only a challenge.”

Pay it forward. ■



SARS and H1N1: The past is prelude

Crisis met, but a troubling obsession with N95s

After some 20 years in infection prevention, **Allison McGeer**, MD, has weathered both the 2003 Toronto outbreak of SARS and the 2009-2010 H1N1 influenza A pandemic.

"I'm really hoping that this is it," says McGeer, a microbiologist and infectious disease consultant at Mount Sinai Hospital in Toronto. "But we have learned that emerging infectious diseases are with us to stay. There is no question that both SARS and pandemic flu — from the perspective of our ability to protect patients, our recognition of infectious disease risks — have been enormously valuable. But I've had enough for a while."



Allison McGeer

Coming swiftly out of Hong Kong as a severe infection of unknown etiology, SARS hit Toronto hard. Thousands were quarantined, and health care workers were among those who died. Even then, McGeer knew that the bitter struggle could pay off later when pandemic flu inevitably emerged.

"We had really very little public health infection prevention strength at a provincial level in Ontario," she recalls. "We had done very little pandemic planning, and it was hard to get people organized. SARS really galvanized that. We went from being way behind other jurisdictions in Canada in pandemic planning to being equal to or ahead of them. And that was an enormous benefit."

Postmortems of the global outbreak, which seemed to dissipate as quickly as it appeared, included the conclusion that more infection preventionists were needed in Toronto hospitals. They are there now.

"Also [after SARS], really for the first time in Canada, people started looking at health care

workers as potentially having occupational risks," McGeer says. "We had largely ignored that, and that was a benefit for public planning too because people could talk about the potential risks to health care workers and about the need to protect them."

Infection preventionists everywhere did not know what to expect when H1N1 emerged last year as a novel pandemic strain, but in Toronto McGeer and colleagues had to fight the perception that it was the return of SARS.

"When you live through SARS, people tend to see all respiratory infections as the same," she says. "It's really hard to get people focused on [the fact] that influenza is completely different. It actually caused some problems in that sense because people tended to resort to 'this is what we did during SARS.'"

In the aftermath of SARS, health care worker unions pushed hard for N95 respirators for medical workers treating H1N1 patients. The old controversy about droplet and airborne spread had long since tipped the balance to respirators instead of surgical masks, and there was no going back in the wake of SARS.

"Basically, it has become completely a political issue in Ontario," McGeer says. "I don't mind [them] fighting for N95 respirators. Whatever I think of them, I can see that the argument is necessary. What I can't fathom is why [they] are doing that and not arguing that we have to have antiviral stockpiles. If you see it as your role to be out there on the front line protecting your workers, that's great; I have no objection to that. But what you really want are antiviral stockpiles."

While the relatively mild H1N1 pandemic has not been a major problem for well-stocked and well-staffed Toronto hospitals, the fixation on N95 respirators was disturbing and could spell trouble during a more severe pandemic in the future, she notes.

"If this had been a more severe pandemic, if there had really been significant risks to health care workers, that resonance of SARS would have been a very significant problem for us," McGeer says. "This resolute focus on a single thing — whether or not it is useful — would have significantly detracted from our capacity as a system to do what we needed to do to best protect health care workers. The second piece is, if we had actually run out of N95s, then this complete dependence on them as a security blanket in the absence of evidence would have done us a lot of harm." ■



The Joint Commission Update for Infection Control

News you can use to stay in compliance

Joint Commission drops controversial IC patient safety goal on sentinel event reporting of HAIs

HAI deaths as sentinel events still required, but widely underreported

The Joint Commission has dropped a controversial infection prevention patient safety goal that recommended sentinel event investigations of unanticipated patient deaths and serious injuries due to health care-associated infections (HAIs). In doing so, however, The Joint Commission emphasized it was not discouraging such investigations, which indeed remain a requirement under existing sentinel event standards.

"It is already addressed through our sentinel event policies, so actually it was a redundant requirement," says **Maureen Carr**, project director of Standards and Survey Methods at The Joint Commission. "The reason for this revision was to really make sure that we were focusing on things that should be national patient safety goals. The feeling was that this was really covered under the sentinel event policy. We were already bringing attention to it there, and it wasn't needed as a national patient safety goal."

All accredited organizations must follow sentinel event policies, which call for root-cause analysis (RCA) of "events that result in unanticipated death or major, permanent loss of function not related to the natural course of illness," Carr says. "That would include [HAIs]."

As part of a renewed emphasis on infection prevention, the measure was first included in the 2004 patient safety goals and remained in effect through 2009. It was not continued in the 2010 patient safety goals. According to The Joint Commission, the RCA in such cases was to address "the management of the patient before and after the identification of infection."

The goal was plagued by underreporting, with The Joint Commission citing the apparent discon-

nect between the number of HAI deaths nationally and the paltry number of reports it was receiving. (**See *The Joint Commission Update for Infection Control, December 2008.***) For example, The Joint Commission received some 15 sentinel event reports related to infection in 2007. Yet, according to the Centers for Disease Control and Prevention, 5%-10% of hospitalized patients develop an HAI, corresponding to approximately 2 million HAIs associated with nearly 100,000 deaths each year in U.S. hospitals.¹

The "unanticipated" aspect of the definition may be part of the problem, as patients being kept alive by invasive devices may certainly have an HAI among their end-term sequela. In addition, reporting the RCA results was voluntary, but strongly encouraged to identify trends and improve patient safety. Resource and time constraints almost certainly inhibited reporting by hospitals and individual infection preventionists, but the bottom line is that unanticipated patient deaths or serious injuries due to HAIs still should be investigated as sentinel events.

"Absolutely, if you have somebody that dies, then we are normally doing a root-cause analysis on it anyway," emphasized **Sue Dill Calloway**, RN, MSN, JD, director of hospital patient safety at OHIC Insurance Co./The Doctors Co. in Columbus, OH. "Infection control is extremely important, but they thought [the requirement] was already reflected in the other standards. They still have a lot of infection control stuff in the [2010 patient safety goals] with central lines, surgical infections and multidrug-resistant organisms."

Indeed, against the backdrop of underreporting of sentinel events, the sweep of the 2010

goals raises the question of whether The Joint Commission is pushing infection prevention programs beyond their resources.

"Part of it is having a culture and leadership that is actually going to have the FTEs so the infection preventionist doesn't feel like they are drowning and they can't get the basics done," Calloway says. "The Joint Commission has eight pages of infection control standards and [they include requirements] that you have enough people and resources."

They do not require a specific staffing formula, however, and that may be part of the problem. The Joint commission "just says 'sufficient staffing' and that's pretty darn broad," she says.

Reference

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Keys to compliance with the new 2010 MDRO goal

Include C. diff, gram negatives

Given that some trace the very founding of hospital infection prevention programs back to the first volleys in the longstanding battle with multidrug-resistant organisms (MDROs), it comes as little surprise that The Joint Commission has made these bugs the focus of a National Patient Goal for 2010. At the same time, it signals that the threat posed to increasingly frail patients by methicillin-resistant *Staphylococcus aureus* (MRSA) and other MDROs may actually be on the rise.

The price of keeping so many patients alive through cutting-edge interventions and transplants is that there are ever more targets for these resourceful, ever-evolving pathogens. But dramatic reductions in infection rates in recent years also signal that infection prevention has devised a few tricks of its own, and some of these hard-earned strategies coupled with ongoing vigilance may yet turn the tide toward patient safety.

"Patient safety goals are kind of a subset of our standards," explained **Louise M. Kuhny**, RN, MPH, MBA, CIC, senior associate director of stan-

dards interpretation at The Joint Commission. "The purpose of them is to put a spotlight on critical issues in patient safety and patient quality. Obviously, health care-associated infections have risen to the level of national concern, and therefore we are putting out some more requirements to help focus energy and efforts on preventing HAIs."

The Joint Commission's 2010 patient safety goal (NPSG.07.03.01) calls for hospitals to implement evidence-based practices to prevent HAIs due to MDROs. This requirement applies to, but is not limited to, epidemiologically important organisms such as MRSA, *Clostridium difficile* (*C. diff*), vancomycin-resistant enterococci (VRE), and multidrug-resistant gram-negative bacteria, the goal states. Of course, infection preventionists have pointed out that *C. diff* by biological definition does not technically fall into the category of an MDRO.

"We know that microbiologically *C. diff* is technically not an MDRO," Kuhny noted during a recent Joint Commission webinar on the issue. "However, it behaves like an MDRO, and we have chosen to put it under this goal in an effort to make sure that it is addressed as well as the other [pathogens]. It behaves like an MDRO because it requires isolation and has limited antimicrobial therapy."

By the same token, questions have been raised about the inclusion of gram-negative bacteria, she noted. Gram negatives have yielded center stage to MRSA and other gram-positive bacteria in recent years, but they appear on the way to an unwelcome comeback with such threats as emerging carbapenem-resistant *Klebsiella pneumoniae*. Thus, The Joint Commission included gram-negative bugs in the goal, but it is leaving it up to individual hospitals to decide which, if any, gram-negative problem they should address. Indeed, the whole MDRO effort should be preceded by a risk assessment. The patient safety goal calls for infection preventionists to conduct periodic risk assessments for MDRO acquisition and transmission. **(See goal, p. 3.)** This may be part of a general infection control risk assessment (required in IC.01.03.01) or separated out, Kuhny said.

"This is the same type of thing but it needs to be focused directly on MDROs," she explained. "In terms of paperwork and how you structure the risk assessment, you can choose to have it either as one part of your bigger, general infection control risk assessment or you could break it out in a

MDRO goal starts with risk assessment

The Joint Commission's 2010 patient safety goal to prevent multidrug-resistant infections (NPSG.07.03.01) includes the following key aspects and elements of performance:

- Implement evidence-based practices to prevent health care-associated infections due to multidrug-resistant organisms in acute care hospitals.

Note: This requirement applies to, but is not limited to, epidemiologically important organisms such as methicillin-resistant *Staphylococcus aureus* (MRSA), *Clostridium difficile* (CDI), vancomycin-resistant enterococci (VRE), and multidrug-resistant gram-negative bacteria.

Rationale for NPSG.07.03.01

Patients continue to acquire health care-associated infections at an alarming rate. Risks and patient populations, however, differ between hospitals. Therefore, prevention and control strategies must be tailored to the specific needs of each hospital based on its risk assessment. The elements of performance for this requirement are designed to help reduce or prevent health care-associated infections from epidemiologically important multidrug-resistant organisms (MDROs).

Note: Hand hygiene, contact precautions, as well as cleaning and disinfecting patient care equipment and the patient's environment are essential strategies for preventing the spread of health care-associated infections. Hand hygiene is addressed in NPSG.07.01.01. Contact precautions for patients with epidemiologically significant multidrug-resistant organisms (MDROs) are covered in IC.02.01.01, EP 3. Cleaning and disinfecting patient care equipment are addressed in IC.02.02.01.

Elements of Performance for NPSG.07.03.01

1. Conduct periodic risk assessments (in time frames defined by the hospital) for multidrug-resistant organism acquisition and transmission.

2. Based on the results of the risk assessment, educate staff and licensed independent practitioners about health care-associated infections, multidrug-resistant organisms, and prevention strategies at hire and annually thereafter.

Note: The education provided recognizes the diverse roles of staff and licensed independent

practitioners and is consistent with their roles within the hospital.

3. Educate patients, and their families as needed, who are infected or colonized with a multidrug-resistant organism about health care-associated infection strategies.

4. Implement a surveillance program for multidrug-resistant organisms based on the risk assessment. **Note:** Surveillance may be targeted rather than hospitalwide.

5. Measure and monitor multidrug-resistant organism prevention processes and outcomes, including the following:

- Multidrug-resistant organism infection rates using evidence-based metrics
- Compliance with evidence-based guidelines or best practices

- Evaluation of the education program provided to staff and licensed independent practitioners

Note: Surveillance may be targeted rather than hospitalwide.

6. Provide multidrug-resistant organism process and outcome data to key stakeholders, including leaders, licensed independent practitioners, nursing staff, and other clinicians.

7. Implement policies and practices aimed at reducing the risk of transmitting multidrug-resistant organisms. These policies and practices meet regulatory requirements and are aligned with evidence-based standards (for example, the Centers for Disease Control and Prevention (CDC) and/or professional organization guidelines).

8. When indicated by the risk assessment, implement a laboratory-based alert system that identifies new patients with multidrug-resistant organisms.

Note: The alert system may use telephones, faxes, pagers, automated and secure electronic alerts, or a combination of these methods.

9. When indicated by the risk assessment, implement an alert system that identifies readmitted or transferred patients who are known to be positive for multidrug-resistant organisms.

Notes: The alert system information may exist in a separate electronic database or may be integrated into the admission system.

The alert system may be either manual or electronic or a combination of both.

Each hospital may define its own parameters in terms of time and clinical manifestation to determine which readmitted patients require isolation. ■

separate document. It doesn't matter to us, as long as you can point to it when the surveyors visit."

Based on the results of the risk assessment, the hospital educates staff about HAI and MDRO pre-

vention strategies at hire and annually thereafter.

"We recognize that education will be different for different providers," Kuhny said. "You're going to teach physicians different things than you teach nurses aides and housekeepers. You

can definitely customize education and determine what kind of approach you want to take. It can be written, web-based learning, face-to-face — as long as you can demonstrate that the education has been performed.”

As part of achieving the goal, the hospital also must educate patients — and their families as needed — who are infected or colonized with an MDRO.

“The minimum requirement here is that you provide education for those people that come up positive for an MDRO, either an infection or colonization,” Kuhny said. “Many organizations are choosing to go beyond that and do some basic MDRO education for everyone, but our minimum requirement is that you do it for those people that are infected or colonized.”

The MDRO goal calls for the hospital to implement a surveillance program for multidrug-resistant organisms based on the risk assessment. “You may do targeted surveillance,” Kuhny said. “That means based on your risk assessment, you can choose which organisms, which units, which types of services you want to target in your surveillance program and prioritize.”

The hospital must measure and monitor multidrug-resistant organism prevention processes and outcomes including the following:

- multidrug-resistant organism infection rates using evidence-based metrics;
- compliance with evidence-based guidelines or best practices;
- evaluation of the education program provided to staff and licensed independent practitioners.

The monitoring process includes both outcome and process measures, which will likely vary significantly from one organization to another.

“So, your outcome measure here is actual infection rates,” Kuhny said. “How many people have a negative outcome and are actually infected? Then there are a minimum of two required process measures. The first one is whether people are complying with practices. One example here of something that you might do is measure isolation compliance. Are people wearing the gowns and gloves when designated?”

The hospital must then provide the MDRO surveillance data to key stakeholders, including leaders, licensed independent practitioners, nursing staff, and other clinicians.

“This is a really important thing,” she stressed. “Key stakeholders go from your frontline staff up to — we hope — your board members. Everyone that has some decision-making [responsibility] in

the organization concerning MDROs should get the surveillance data so they have feedback and know how they are doing. The frontline staff decide many times who gets isolated and how the precautions are going to be implemented. The board members decide what resources are available to support such programs.”

Then, the hospital implements policies and practices aimed at reducing the risk of transmitting MDROs, ensuring they meet regulatory requirements and are aligned with evidence-based standards. Organizations should compare their existing policies and procedures with relevant guidelines and update as needed.

When indicated by the risk assessment, the hospital should implement a laboratory-based alert system that identifies new patients with multidrug-resistant organisms. The alert system may be either manual or electronic or a combination of both of these methods.

“This means when the laboratory test comes back positive — a culture or what have you — will the people who need to know, know quickly?” Kuhny said.

Turnaround times are not going to be specified by The Joint Commission, but remember new — both new admissions and new culture results — reporting should be determined based on needs related to both isolation and treatment, she said. “The people who need to know are those making the isolation decisions, which is usually the nursing staff,” she said. “In addition, the people who are making a treatment decision. Are we going to treat this MDRO — do we need to prescribe antimicrobials? How quickly did that information get to those people?”

Daily batching of these reports is generally discouraged.

“If you are only transmitting this information once a day it may very well not meet the needs of your patients,” Kuhny said. “We would encourage you to do it on a more timely basis.”

When indicated by the risk assessment, the hospital then implements an alert system that identifies readmitted or transferred MDRO-positive patients. This means that all patients must be identified, but it does not mean that isolation is appropriate or required in all circumstances.

“This does not mean that all patients that ever had an MDRO need to be isolated when they are readmitted to the organization,” Kuhny said. “It just means that the information about that previous positive result needs to get to the people that need it.” ■