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Patients with resistant staph infections are putting health care workers at risk

Rise in MRSA renews pressure for precautions

In the battle against nosocomial spread of methicillin-resistant *Staphylococcus aureus* (MRSA), health care workers are more than just potential carriers. They may be at risk for occupationally acquired infection.

Employee health professionals increasingly are at the center of efforts to combat MRSA, educating health care workers about the importance of precautions such as hand hygiene to protect patients — and themselves.

"The paradigm may be changing a little bit," says **Trish Perl**, MD, MSc, hospital epidemiologist at Johns Hopkins Hospital in Baltimore and past president of the Society of Healthcare Epidemiology of America. "There is an additional risk [beyond patient safety] we need to consider in all of this."

MRSA also has caught the attention of unions that represent health care workers. "Nurses and other health care workers could become colonized and not be aware of it," says **Evie Bain**, RN, MEd, COHN-S, coordinator of the division of health and safety at the Massachusetts Nurses Association in Canton. "If they had an adverse health event, like a surgical procedure themselves, they could then develop an infection."

Although health care workers may view MRSA as solely a patient safety issue, concerns about MRSA have grown as its prevalence increases. About 60% of *S. aureus* cultures isolated from patients in intensive care units were methicillin-resistant in 2003, according to the Centers for Disease Control and Prevention in Atlanta.[1]

A review of 45 million hospital discharge records indicated that the prevalence *S. aureus* in general infections rose at a rate of 7.1% a year from 1998 to 2003 (and 9.3% in orthopedic surgery), which indicates that current rates of infection may be significantly higher.[2]

In addition, an increasing proportion of MRSA is community-acquired, which presents an exposure risk for health care workers. At Johns Hopkins Hospital, for example, two health care workers developed soft-tissue infections that were due to hospital contamination with community-acquired

strains.[3] Community-acquired MRSA (CA-MRSA) is not isolated to high-risk subgroups. One study in an Atlanta hospital found that 72% of community-onset skin and soft-tissue infections due to *S. aureus* were methicillin-resistant.[4]

"The health care institutions in this country have to come up with some kind of program to protect everybody — patients and health care workers," says **Darryl Alexander**, MS, occupational and environmental health coordinator at the American Federation of Teachers (AFT) in Washington, DC. The union also is an advocacy group for nurses.

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Health care workers had expressed concern about the possible risk of MRSA when Johns Hopkins began an investigation in an outpatient HIV and infectious disease clinic. Through surveys and cultures, the hospital discovered two health care workers who had developed skin and soft-tissue infections due to MRSA. One had cared for patients with CA-MRSA; the other had no direct patient contact.

Further investigation revealed substantial environmental contamination with MRSA, including a patient examination table, a computer keyboard, and patient chairs in the triage area, waiting room and examination room. "It was extraordinary for us to see so much environmental contamination," Perl says.

As a result, after a thorough decontamination of the clinic, Johns Hopkins placed disinfectant wipes in examination rooms and added additional dispensers of alcohol-based hand gels.

Topple the silo

Hospitals also need to include employees in their surveillance of *S. aureus* infections, Perl notes. "Employee health needs to work very closely with infection control. That's probably the most important message," she says. "We can't work in silos anymore."

Johns Hopkins also has instituted active surveillance among high-risk patient populations, such as adult and pediatric intensive care units. Patients who have spent time in a long-term care facility in the past six months also will be screened for MRSA and other high-risk bacteria.

Some hospitals have begun to conduct active surveillance of patients on admission to determine if they are colonized with MRSA, but the CDC has not recommended the practice for all facilities. A CDC advisory panel noted that a hospital's interventions should vary based on the nature of the MRSA problem at the facility. "More research is needed to determine the circumstances under which ASC are most beneficial, but their use should be considered in some settings, especially if other control measures have been ineffective," the Healthcare Infection Control Practices Advisory Committee (HICPAC) concluded.

Yet SHEA issued guidelines in 2003 recommending active surveillance of patients at high risk for MRSA, such as those with a history of dialysis, a stay in long-term care, or previous MRSA infection. "Active surveillance cultures are essential to identify the reservoir for spread of

MRSA and VRE infections and make control possible using the CDC's long-recommended contact precautions," the SHEA guidelines state.[5] Neither the CDC nor SHEA recommend the routine testing of health care workers for nasal colonization of *S. aureus*.

Hospital targets surgical patients

New England Baptist Hospital in Boston has focused MRSA screening efforts on its 6,000 inpatient orthopedic surgeries a year. The hospital purchased a rapid polymerase chain reaction (PCR) test by Cepheid of Sunnyvale, CA, which provides results on MRSA within two hours.

A preliminary screening of 133 patients revealed that 29% had methicillin-susceptible *S. aureus* and 4% had MRSA. The hospital now screens all of its surgical inpatients.

The hospital spent about $400,000 on new equipment to set up the active surveillance program and hired a microbiologist. Of 200 patients identified with MRSA, only one has developed a post-surgical infection, says **Maureen Spencer**, RN, MEd, CIC, infection control manager. The hospital's surgical-site infection rate has steadily dropped since 2004, to about 0.4%. Only 28% of the infections are caused by *S. aureus*, compared with 60% before the surveillance program, she says.

Those identified with MRSA receive vancomycin before surgery. They also undergo a five-day full-body wash with chlorhexidine as a preparation for surgery. Another culture is taken before surgery; the hospital found it eradicated MRSA in 82% of the cases.

Additional precautions are taken with those who remain MRSA-positive. The identification also ensures that they receive effective antibiotics, says Spencer. "It's better for the patient and hospital to know so you can get them on precautions right away," she says.

Do HCWs need masks in MRSA rooms?

Meanwhile, it's vital for health care workers to use proper hand hygiene with all patients and to use contact precautions with patients who have been identified with MRSA. Again, CDC and SHEA differ in their recommendations.

CDC recommends the use of gloves and gown, but says that masks are not recommended except with "splash-generating" procedures such as wound irrigation or intubation, patients who have open tracheostomies, or "where there is evidence of transmission from heavily colonized sources."

SHEA advises that "[m]asks should be worn as part of isolation precautions when entering the room of a patient colonized or infected with MRSA . . . to decrease nasal acquisition by health care workers."

The AFT's Alexander advocates the more stringent SHEA guidelines. A comprehensive program designed to protect patients also will benefit health care workers, she says.

"We want to make sure that workers have the right kind of training," she says. "Health care workers should be encouraged to wear masks and gowns. Studies show that can reduce the risk of [them] becoming carriers."

References

1. Siegel JD, Rhinehart E, Jackson M, et al. Centers for Disease Control and Prevention. Healthcare Infection Control Practices Advisory Committee. Management of multidrug-resistant organisms in healthcare settings, 2006. www.cdc.gov/ncidod/dhqp/pdf/ar/mdroGuideline2006.pdf. [Accessed on April 23, 2007.]
2. Noskin G, Rubin R, Schentag J, et al. Trends in the prevalence rate of *S. aureus* infection in U.S. hospitals, 1998-2003. Abstract 132. Presented at the Society for Healthcare Epidemiology of America. Baltimore; April 14-17, 2007.
3. Johnston CP, Cooper L, Ruby W, et al. Epidemiology of community-acquired methicillin-resistant *Staphylococcus aureus* skin infections among healthcare workers in an outpatient clinic. *Infect Control Hosp Epidemiol* 2006; 27:1,133-1,136.
4. King MD, Humphrey BJ, Wang YF, et al. Emergence of community-acquired methicillin-resistant *Staphylococcus aureus* USA 300 clone as the predominant cause of skin and soft-tissue infections. *Ann Intern Med* 2006; 144:309-317.
5. Muto CA, Jernigan JA, Ostrowsky BE, et al. SHEA guideline for preventing nosocomial transmission of multidrug-resistant strains of *Staphylococcus aureus* and *Enterococcus*. *Infect Control Hosp Epidemiol* 2003; 24:362-386. ■

'Do no harm'? HCWs need vigilance on TB

HCW exposes patients at NYC hospital

In January, a health care worker who worked in the maternity ward, neonatal intensive care unit, newborn nursery and psychiatric ward of St. Barnabas Hospital in New York City was diagnosed with active tuberculosis. She had exposed 532 patients, including more than 200 of them newborns, and about 100 co-workers.

Two months later, only about half of her fellow

employees had come for TB screening related to the exposure. The difficulty in getting health care workers to respond to the exposure is evidence of a broader problem: Complacency about TB infection among health care workers.

"A lot of [foreign-born] health care workers believe they are going to be positive because of the BCG vaccine they have received in childhood," says **Sonal Munsiff**, MD, director of the Bureau of TB Control at the New York City Health Department. "They don't value the results of the skin test."

Health care workers also are aware that few people with TB infection progress to active disease. About 5% will develop active TB in the first two years after infection and another 5% will experience the disease over a lifetime.

Although the number of cases may be small, the progression to active disease has huge implications both for the individual health care worker and the hospital. In 2004, a nurse at Chesapeake General Hospital ignored her symptoms for months. By the time she was diagnosed, treatment was no longer effective and she died. Meanwhile, she had exposed thousands; the hospital tested about 1,600 patients, visitors, volunteers, and 280 co-workers. **(See *Hospital Employee Health*, September 2004, p. 114.)**

"When [a health care worker develops active TB], it can be potentially catastrophic, not only to the health care worker but also to the patients," says **Timothy Sterling**, MD, an infectious disease expert and associate professor of medicine at the Vanderbilt University Medical Center in Nashville, TN.

If the health care worker is caring for especially vulnerable patients, such as HIV, oncology, or transplant patients, "then there's a greater potential for real harm."

And, of course, physicians and other health care workers pledge to "do no harm." Sterling and his colleague, David W. Haas, MD, urged health care workers to follow the guidelines of the Centers for Disease Control and Prevention and consider treatment for latent TB infection.[1]

Educate HCWs about risks, benefits

Employee health invests considerable resources in making sure all employees receive an annual TB screening. They also need to take a leading role in educating employees and helping them determine if they need treatment for latent TB infection, says Munsiff.

"They can be more rigorous about educating and informing about the risks and benefits of LTBI treatment," she says. If they decline treatment, that should be documented in their employee health record. Employees also may be asked to sign a waiver, as they do if they decline hepatitis B vaccine, she suggests.

"The greatest risk of developing TB is in the first year after infection," says Munsiff. "The earlier treatment is given, the lower the risk the person will have disease."

Not all health care workers will be candidates for LTBI treatment. A history of liver injury or excessive alcohol intake is a contraindication, and patients with active hepatitis or liver disease require close monitoring if they undergo treatment. The CDC guidelines also state that most health care workers "do not have the risk factors for progression to disease that serve as the basis for the current recommendations for targeted testing and treatment of LTBI. The majority of health care workers in the United States do not provide care in areas in which the prevalence of TB is high."[2]

HIV, organ transplant or other immunosuppressed individuals should receive the treatment. CDC also recommends LTBI treatment for people who have lived in a country with a high incidence of TB, which would include many foreign-born health care workers.

Yet foreign-born health care workers may be reluctant to take treatment because they attribute their positive skin tests to BCG vaccination in their childhood.

Some hospitals have begun using the whole-blood assay such as QuantiFERON-Gold as a confirmatory test for positive tuberculin skin tests. QuantiFERON does not react to BCG and may be more readily accepted as a "true positive" by foreign-born health care workers.

But CDC does not recommend the dual use of the tests. "It's not clear what the scores mean if one test is positive and one test is negative," says **Phil LoBue**, MD, associate director for science in the Division of Tuberculosis Elimination. "[If] you've chosen to believe the QuantiFERON over the skin test, why are you even doing the skin test to begin with?"

LoBue acknowledges that it may be hard to convince someone to take medication for latent infection daily for nine months when they are asymptomatic. But they should be advised that adverse events from the medication (isoniazid) are rare, and that the treatment is effective in

preventing latent infection from progressing to active disease, he says. "In general, the benefits still outweigh the risk," he says.

Meanwhile, CDC is sponsoring a study of the effectiveness of a weekly dose of rifapentine for 12 weeks, compared to the traditional daily, nine-month treatment. Researchers hope to enlist 8,000 patients in the study. Clearly, the shorter regimen would be more tolerable. "We're looking at several more years before we have the answer [as to its effectiveness]," LoBue says.

Annual screen may not catch symptoms

If health care workers with positive TB screens decline treatment for LTBI, they are given annual health screens and asked to report any TB-like symptoms. Unfortunately, initially TB can seem like a common respiratory virus.

"It's definitely not uncommon for all kinds of TB patients to be sick for several weeks before they realize they need medical attention," says Munsiff. "It's a slowly progressing disease for many people."

That is an important message to convey in annual TB education. Health care workers with LTBI need to seek medical evaluation if they develop symptoms of TB, which include a cough lasting more than three weeks, bloody sputum, loss of appetite, unexplained weight loss, night sweats, hoarseness, fever, fatigue, or chest pain.

Those who decline treatment for LTBI will have to have a heightened awareness, says LoBue.

"Given the current tools and technologies, there is no perfect screening system that can guarantee there will be no cases of TB in health care workers," he says.

References

1. Sterling TR and Hass DW. Transmission of *Mycobacterium tuberculosis* from health care workers. *N Engl J Med* 2006; 355: 118-121.
2. Jensen PA, Lambert LA, Iademarco MF, et al. Guidelines for preventing the transmission of *Mycobacterium tuberculosis* in health-care settings, 2005. *MMWR* 2006; 54:1-141. ■

OSHA and NIOSH: Use blunt suture needles

Devices reduce injuries in OR

Consider yourself forewarned: It's time to switch to blunt suture needles in the OR.

In a rare joint bulletin, the U.S. Occupational Safety and Health Administration and the National Institute for Occupational Safety and Health advise hospitals that "employers must use safer devices to replace corresponding conventional sharp-tip suture needles in their workplaces when clinically appropriate."

Both the American College of Surgeons and the Association of Perioperative Registered Nurses (AORN) have endorsed the use of blunt suture needles for suturing fascia. The bulletin notes that more than half (51% to 77%) of percutaneous injuries in the OR are caused by sharp suture needles.

Many hospitals have faced resistance from surgeons, who are concerned that the blunt needles will not perform as well. But three New York hospitals experienced a dramatic reduction in injuries due to blunt suture needles when the devices were implemented in gynecologic surgery in 1994, according to the bulletin. Other studies also have shown that blunt suture needles are "technically satisfactory" and effective in reducing injuries, the bulletin says.

The main barrier is a cultural one. Switching to a new device and technique always is challenging, says **Larry Reed**, MS, deputy director of the Division of Surveillance, Hazard Evaluations, and Field Studies at NIOSH in Cincinnati.

"I think it will be difficult [to change], but I am optimistic that we can have some significant impact in terms of injury reduction," says Reed.

The bulletin arose out of a NIOSH-sponsored sharps safety workshop held last year. "There was a clear sense of strong concern that we should be telling OR health care personnel about [the benefits of] these blunt instruments," he says.

The "encouragement" to use blunt suture needles is made stronger by OSHA's enforcement of the bloodborne pathogen standard. It is the most frequently cited standard in hospital inspections.

Hospitals are required to implement sharps safety in the OR. "Where an employer has determined that the use of available safer devices is not feasible, the clinical justification for this determination must be documented in the facility's Exposure Control Plan and the employer must implement alternative means of protecting surgical personnel from percutaneous injuries," the bulletin states.

(Editor's note: A copy of the bulletin is available at www.osha.gov/dts/shib/shib032307.html.) ■

Pushing flu shot declination statements irks some HCWs

But efforts can boost flu vaccination rates

You may be able to boost your influenza vaccination rates by requiring health care workers to sign mandatory declination statements. But declinations themselves may put a negative tone to the annual campaign.

Those are some conclusions of employee health professionals as they calculated the successes and challenges of the past influenza season.

A growing number of organizations have called for the use of declination statements to improve health care worker immunization. The Society for Healthcare Epidemiology of America (SHEA) included declination statements in its recommendations for influenza vaccination. Even the American Nurses Association has endorsed declination statements, as long as they are used to track the reasons for declining the vaccine and do not have a punitive element.

"We think the declination form opens the dialogue and provide opportunity for education," says **Nancy Hughes**, MS, RN, director of the Center for Occupational and Environmental Health at the American Nurses Association in Silver Spring, MD.

The wording of declination statements may vary from inquisitive (asking why they chose not to receive the vaccine) to chastising. Typically, health care workers acknowledge that failing to get the vaccine put them, their families, and their patients at risk for influenza. **(For a copy of the SHEA sample declination statement, see box on right.)**

To test the impact of declination statements, Mayo Clinic in Rochester, MN, selected 500 nurses who had not received the vaccine by the end of November. Half received an e-mail reminding them to get the vaccine and referring them to educational links on the intranet. The other half received the e-mail with voting buttons that asked them if they planned to get the vaccine. If not, they were asked to indicate that they had read the declination statement and were declining the vaccine.

About three months later, Mayo surveyed the nurses. About 40% in both groups responded. About equal numbers said they were more inclined to receive the vaccine after the e-mail (14% in the declination group vs. 17% in the no-declination group), but about one in five (22%) in the declination group said they had been irritated by the e-mail.

"Adding the declination statement had no positive impact on likelihood of subsequently getting vaccinated," says **Bill Buchta**, MD, MPH, medical director of the Employee Occupational Health Service. "We did not see a groundswell of response to a declination statement. In fact, they tended to be less likely to get vaccinated after reading the e-mail."

Of course, that does not mean that declination statements don't work. The Mayo declination was not mandatory, as it is as other hospitals. Although there is little data on declination statements, hospitals report higher vaccination statements after using them.

"It does give you pause for thought," says Buchta. "At what cost are you doing that? Are you alienating your employees unnecessarily?"

Declination of Annual Influenza Vaccination

I understand that due to my occupational exposure, I may be at risk of acquiring influenza infection. In addition, I may spread influenza to my patients, other healthcare workers, and my family, even if I have no symptoms. This can result in serious infection, particularly in persons at high risk for influenza complications.

I have received education about the effectiveness of influenza vaccination as well as the adverse events. I have also been given the opportunity to be vaccinated with influenza vaccine, at no charge to myself. However, I decline influenza vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring influenza, potentially resulting in transmission to my patients. If in the future I want to be vaccinated with influenza vaccine, I can receive the vaccine at no charge to me.

Employee's Name: _____
Witness Name: _____
Employee's Signature: _____
Witness Signature: _____
Date: ____ / _____ / _____

Source: Society for Hospital Epidemiology of America, www.shea-online.org.

Making a statement about flu

Declination statements have a practical component beyond urging health care workers to be

vaccinated. They help track vaccinations and the reasons for declining, which are aspects of the Joint Commission's standard on influenza immunization of health care workers.

"I think it sends a message that we're really serious about this," says **Trish Perl**, MD, MSc, hospital epidemiologist at Johns Hopkins Hospital in Baltimore and past president of SHEA.

After using declination statements, health care worker vaccinations tripled at the clinics of Allina Hospitals and Clinics in Minneapolis — from about 500 doses to 1,898, says **Karen Ferrara**, RN, MPH, COHN-S, employee health and safety consultant. A couple of the health system's smaller hospitals have had similar success.

However, Allina hasn't implemented mandatory declination statements systemwide because of the logistical difficulty of monitoring the program. Instead, the health system has surveyed employees in low compliance areas to ask why they didn't receive the vaccine or why they believe their coworkers didn't receive the vaccine.

Employees are not identified by name in the surveys. "We're trying to use that to get over some barriers we have," Ferrara says.

The surveys showed that about 10% of employees had gotten the vaccine elsewhere. The main reason for not getting vaccinated: 'I'm healthy and I don't need it.'

Ferrara plans to provide more education about influenza infection — and the possibility of asymptomatic transmission. Future campaigns also will use "flu deputies" in each unit to make the vaccine as accessible as possible. ■

Do random tests bring a 'drug-free workplace'?

Hospitals differ on approach to testing

Truck drivers do it. So do airline pilots and nuclear power plant workers. Should health care workers also be subject to random drug tests?

That's a question that continues to spark controversy. While pre-placement and for-cause drug testing are commonplace in hospitals, employee health professionals have widely different views on random drug testing.

"Many health care professionals are making life-and-death decisions that are just as critical as [those of] air traffic controllers," says **Karl Auerbach**, MD, MS, MBA, staff physician with the occupational and environmental medicine program at Strong Memorial Hospital in Rochester, NY, and assistant professor at the University of Rochester School of Medicine and Dentistry.

"I would not want my physician or my nurse being impaired by drugs," he says.

Yet some employee health professionals question the value of random drug testing compared to a for-cause program that targets employees who have performance problems combined with a liberal employee assistance program that offers treatment and counseling.

"Drug testing has been around a long time. I think we still don't have a clear vision on the return on that investment," says **Mary Yarbrough**, MD, MPH, director of occupational health and wellness at Vanderbilt University in Nashville, TN.

Drug screens target high-risk units

Taxi drivers and bus drivers are accustomed to random drug testing. Federal rules require employers with federal contracts to randomly test 50% of their "safety-sensitive" employees for five commonly abused drugs — a high rate intended to act as a deterrent.

Hospitals that use random drug testing typically test a much lower percentage, although they use a broader drug testing panel to include common hospital drugs.

After catching several employees who had diverted hospital narcotics for personal use, Marshfield (WI) Clinic began random drug testing in departments that were deemed to be higher risk, including pharmacy, gastrointestinal surgery, and ambulatory surgery. The testing panels typically include about 10-12 drugs. They vary according to what is used in the unit but often include fentanyl, midazolam, cocaine, amphetamines, and barbiturates. Marshfield Clinic tests about 10% of those employees quarterly.

The testing results are sent to an outside medical review officer (MRO). If a medical substance is detected, the MRO seeks verification that the employee has a valid prescription. Employees who are found stealing drugs from the hospital are handled in a disciplinary manner, but other employees who have positive drug screens are offered treatment opportunities.

Marshfield Clinic now is considering expanding the drug testing program to all employees. "I've worked in the steel industry, the lumber industry, and now the health care industry," says

Bruce Cunha, RN, MS, COHN-S, manager of employee health and safety. "I don't see a difference. I see a world in which everybody is testing. With the federal Drug-Free Workplace [Act], there are few employers who have federal contracts who are not testing. You have to wonder – the places that are not testing, are they magnets for people who can't get a job elsewhere?"

Strong Memorial Hospital in Rochester does not use random drug-testing. But Auerbach, who is an MRO and moderates an MRO listserv, says that random testing can be effective as a deterrent. It should be used with other programs to detect performance problems that could be drug- or alcohol-related and programs to enable employees to come forward and receive treatment and support.

"You do [random testing] in a way that respects the dignity of the individual being tested, most of whom are not going to be drug users," says Auerbach. "You give everyone an equal opportunity to be tested."

Random testing is just one part of a broader program that includes treatment, he says. "I fully agree with the need for treating drug use in a medical way, in a compassionate way, and offering voluntary routes to take care of the issue," Auerbach says. "That is in no way mutually exclusive to the fact that many people don't come forward. I think it's very important that you have both [elements]."

Dose tracking catches diverters

At Vanderbilt University, **Mary Yarbrough**, MD, MPH, director of occupational health and wellness, sees a number of conditions that could affect employee performance, from the declining vision of older workers with presbyopia to depression. She wonders how much attention should be focused on random drug-testing in an atmosphere of limited resources.

"I think the way you identify drug users is by watching their behavior," she says. "If we have a limited resource, why not put that money into supporting supervisors in their role [of monitoring performance]."

Yarbrough also favors treating drug abuse as a medical problem and encouraging physicians, nurses, and others to come forward for counseling and treatment. "If you voluntarily come in and seek help, we will be an advocate for you," she says. "If you go to treatment and get help, we will treat this, as long as there's not been any indication that there's been a problem in the workplace."

Bill Buchta, MD, MPH, medical director of the Employee Occupational Health Service at the Mayo Clinic in Rochester, MN, also questions the use of resources for random drug-testing. "It fosters an environment of distrust and that's not what we want here at Mayo Clinic," he says. "I'm sure that not what most people what."

Tampa (FL) General Hospital uses the AccuDose-Rx medication delivery system (www.mckesson.com) to monitor narcotic use. For example, the tracking database can produce monthly reports indicating how many doses of meperidine 50 mg for injection are given by each nurse compared to other nurses on their unit or in the entire hospital and can track the dosage by the date and time it was removed, explains **JoAnn Shea**, MSN, ARNP, director of employee health and wellness. The Employee Health Director and the pharmacy nurse liaison review the AccuDose reports via a computer database monthly and identify and investigate discrepancies.

In one case, a nurse in the recovery room was drawing twice as much morphine as other staff — although his charts didn't show a difference in patient conditions. In another case, an emergency department nurse was taking 100 merpidine a month while co-workers were taking two or three. Those employees were placed in treatment for substance abuse.

Shea estimates that it would cost $20,000 to $30,000 a year to conduct random testing. "Is it really worth it? I'd rather spend that money on promoting health for employees, and spending time identifying the diverters," she says. ■

Linen lift teams lighten the load

Fewer injuries with carts, tugs

Lift teams aren't just for patient handling. As the UC Davis Health System in Sacramento discovered, the same concept can reduce injuries for other workers who must transfer heavy loads.

At UC Davis, environmental services workers were at high risk of musculoskeletal injury. Workers change about 10 tons of soiled linen each day.

Custodians would lift linen bags from patient rooms to carts. Laborers would lift bags from the carts to larger transfer carts and then into another cart, for transport to an outside laundry.

A single custodian might lift 40 or 50 heavy bags of linen in a day. A bag of wet linen could weigh 30 or more pounds. "Every single lift they made was a chance to get injured," says **Janet Ford**, PT, MS, a physical therapist and workers compensation biomechanics specialist.

In the 2004-2005 fiscal year, the environmental services department suffered about 50 shoulder and back injuries. Linen closets are small, so the hospital couldn't just use smaller bags and let them pile up.

To design a new method of handling laundry, Ford shadowed custodians and laborers and investigated options. The result: Linen lift teams that use small carts connected to each other and to a motorized tug. The lift teams use a mechanical lift to empty carts into a larger container that is shipped to a nearby laundry.

The new equipment cost about $20,000, estimates **Sures Chandra**, assistant manager of environmental services and conference services. "The cost of one injury can easily offset that," he says.

Repetitive lifting was culprit

Ford began her investigation into laundry handling with a basic question: What is causing the injuries? Custodians thought the nurses were filling the laundry bags too full, and nurses wanted the laundry removed more promptly. But those issues weren't the real problem.

The main risk factor was repetitive lifting, she discovered. Pulling and pushing linen-filled carts through the hallways also caused problems.

Even injuries that seemed unrelated to linen may have been connected, Ford suspects. "When you look at your workers' compensation injuries, sometimes it's misleading," she says. "When someone says they hurt themselves mopping, it may be because they were tired from lifting linen."

The hospital previously had considered a system of small, rolling bins in patient rooms or hallways, in which nurses would place soiled linens. That would eliminate multiple lifting of laundry bags. But fire codes wouldn't allow for bins in the hallways.

Ford decided to focus on a well-trained group of employees for laundry lifting, just as the hospital does for patient lifts. The hospital hired six new employees to work as a linen lift team. They work in two-person teams on the day and evening shifts, with one additional person in each team to allow for time off.

"We've now taken a large number of employees out of lifting linen, so we are reducing our exposure to risk," she says.

The hospital could have identified existing employees in environmental services to form the lift team, but the additional staff allowed the custodians to spend more time on the floors, says Chandra. "We decided to allow our existing cleaning crew to do additional cleaning on the floors," he says.

The linen lift crew starts at the loading dock and empty caster carts to the units. There they swap out their carts for one in the soiled linen utility closet and collect linen from each patient room. They make a reverse trip with the loaded caster carts that hook together and maneuvering them with the tug back to the dock. (Caster carts have two large wheels and two small wheels in the front, which make them easy to tip but stable when upright.)

Making a change requires patience and flexibility, Ford cautions. She sought feedback from employees and made changes in the new lift program when it seemed necessary. For example, the hospital initially considered a stationary mechanical lift to empty larger collection carts at the loading dock and decided it wouldn't work out. A mobile lift worked better.

It may take time for everyone to see the benefits. In fact, in the first year, the number of injuries within the Environmental Services department actually rose, from 46 to 48 — although the severity decreased by 42%. In the first half of the next year, injuries were down by 38% and costs declined an additional 39%.

Equipment alone won't solve your problems, either, says Chandra. It's also important to train employees in lifting techniques and body mechanics, he says.

"You have to give them good training and plan their routes well so they get sufficient rest," he says. "That's the only way you prevent injury." ■

Taking a LEAP lowers WC costs

Fewer CNA injuries with lifts

It's a common disconnect: An employee at home, healing from an injury, feels increasingly distant from work. As time passes, the chance of that employee returning to work drops. The result: high workers' compensation costs.

To reverse a spike in workers' compensation, Novant Health in Winston Salem, NC, restructured its response to injured employees and improved their follow-up. The result: Workers' compensation costs remained flat while the hospital system's staff grew from 10,000 to 17,000 employees.

They also took a LEAP — with a Lift, Ergonomics, And Post-offer testing program that focused on preventing patient-handling injuries.

Fewer injuries, less lost time

Changing the workers' compensation system, as well as implementing a safe patient-handling program and functional assessment of new employees, resulted in fewer serious injuries and less lost time. The number of lost workdays among employees declined from about 200 per month to about 20 to 30 per month, says **Kathy Avery**, RN, BSN, corporate director for employee health, workman's compensation, and family leave. The number of restricted days dropped from about 1,350 to about 150, she reports.

Novant Health accomplished its goals by putting a focus on the employees' needs. "One of the biggest successes was getting the employees tied back in with the [case management] system. They feel more involved," Avery says.

The hospital system also identified light-duty jobs that injured employees can safely perform, and almost all employees (98%) are able to return to work in some capacity, says workers' compensation manager **Angel Rich**. "If you can keep a person productive, it's better overall, emotionally, financially, and physically," she says.

EH nurses are WC liaisons

Workers' compensation costs were skyrocketing when Avery took a closer look in 2005. The health system had outsourced the case management of injured employees. Employee health did not get involved until the employees returned to work with restrictions.

Avery discovered that there was not much contact with employees while they were out of work. "The employee did not believe that anybody cared about them," she says. "Nobody was calling them at home to check on them."

As a result, the rate of return to work after six months was low. "We thought we could impact that by assigning [employee health] nurses to cases that were [ongoing]," she says.

Now, employees come to employee health

CNE *questions*

21. According to the Centers for Disease Control and Prevention in Atlanta, what percentage of *Staphylococcus aureus* cultures in the intensive care unit are methicillin-resistant?
A. 82%
B. 60%
C. 24%
D. 16%

22. Foreign-born health care workers with previous BCG vaccination are reluctant to undergo treatment for latent TB infection because:
A. they believe the BCG led to the positive skin test.
B. they do not believe they can get TB infection.
C. BCG provides adequate protection against TB.
D. they are rarely offered treatment.

23. According to Bill Buchta, MD, MPH, how did employees respond to a voluntary declination statement for the influenza vaccine sent by e-mail?
A. It led to a surge in vaccinations.
B. It led to a more favorable view of influenza vaccination.
C. It caused one in five employees to be irritated by the e-mail.
D. It had no effect compared to an educational e-mail with no declination.

24. By using linen lift teams, UC Davis Health System in Sacramento reduced injuries by:
A. reducing the number of employees exposed to lifting risk.
B. reduced the amount of linen lifted.
C. reduced the weight per lift.
D. hiring outside contractors to remove the linen.

Answer Key: 21. B; 22. A; 23. C; 24. A.

CNE instructions

Nurses participate in this continuing education program by reading the issue, using the provided references for further research, and studying the questions at the end of the issue. Participants should select what they believe to be the correct answers, then refer to the list of correct answers to test their knowledge. To clarify confusion surrounding any questions answered incorrectly, please consult the source material. **The semester ends with this issue.** You must complete the evaluation form provided in that issue and return it in the reply envelope provided to receive a credit letter. ■

when they are injured and immediately connect with a nurse liaison. "The nurse follows them through their experience," reports Avery. "They talk to them about doctors' appointments and physical therapy appointments. Now they have a nurse liaison who knows their faces and their names."

Employee health hired a physician assistant to handle workers' compensation cases. Providing swift care to employees helps reduce overall medical costs, Avery says.

"One of our goals to expedite their care, so they weren't sitting in a queue waiting five or six weeks for physical therapy," she says. "If they needed it, we wanted to get them started the next day."

Novant assigned workers' compensation cases to a single physical therapist. "They make our employees a priority whenever possible," she says. The new system streamlines care. "It's really the best thing for the employee," she says.

Lift equipment is essential

Reining in workers' compensation costs would require more than better case management. Novant needed to reduce the number of cases. With a comprehensive approach to injury prevention, Novant reduced its patient-handling injuries from 65 in 2003 to just eight last year.

Avery analyzed the injuries and discovered that lifts and transfers were causing microtraumas and repetitive motion injuries. CNAs (certified nursing assistants) were the most likely to suffer an injury. About half the injuries occurred in the first six months after employees were hired.

She made a case for the purchase of new lifts and patient transfer devices, and Novant took the LEAP. Employees helped evaluate the new equipment in a two-day fair, and Novant placed an emphasis on lifts that were easy to use and had good maintenance records.

Prevention pays back

Buying a sufficient number of lifts also was important, and the investment was substantial. One of Novant's hospitals spent $500,000 on lift and transfer devices. But with injuries that could cost as much as $200,000, "preventing one or two back injuries would pay for the equipment," she says.

Meanwhile, post-offer testing ensured that employees had enough basic physical agility to perform the job, Avery says. "If you're not physically conditioned to do the job, you're at higher risk of being injured," she says.

Avery conducted a job demands analysis to determine the physical requirements in bending and standing, lifting, trunk rotation, and gripping and pinching. For example, even with the use of

COMING IN FUTURE MONTHS

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mechanical lifts, the CNA position required the ability to lift 30 pounds from floor to waist.

Many steps to a leap

Novant also has implemented a wellness program that provides nutrition and smoking cessation classes, walking and stair-climbing, and fitness center discounts. Each part of the LEAP program has contributed to Novant's success in reducing workers' compensation costs, says Rich.

"The reduction we've seen in lost duty days would not have happened if we hadn't made all those steps and processes," she says. ■

CNE objectives

After reading each issue of *Hospital Employee Health*, the nurse will be able to do the following:

- **identify** particular clinical, administrative, or regulatory issues related to the care of hospital employees;
- **describe** how those issues affect health care workers, hospitals, or the health care industry in general;
- **cite** practical solutions to problems associated with the issue, based on overall expert guidelines from the Centers for Disease Control and Prevention, the National Institute for Occupational Safety and Health, the U.S. Occupational Safety and Health Administration, or other authorities, or based on independent recommendations from clinicians at individual institutions. ■

The Joint Commission Update for Infection Control

News you can use to stay in compliance

The neglected vaccine: Joint Commission finds many hospitals not offering pneumonia shot to at-risk patients

'It is still among our poorest performance measures'

Despite existing national recommendations to the contrary, more than a third of hospitals reporting performance measurement data to The Joint Commission are not offering pneumococcal vaccine to their pneumonia patients, a recent report reveals. Titled "Improving America's Hospitals: A Report on Quality and Safety," The report details the performance of accredited hospitals against standardized national performance measures and The Joint Commission's National Patient Safety Goals. According to analysis of the most recent data available, in 2005 Joint Commission-accredited hospitals achieved a national average performance of 63% in providing pneumococcal screening and vaccinating pneumonia patients, the report states.

The data reflect the percentage of pneumonia patients ages 65 years and older who were screened and vaccinated to prevent pneumonia. "It's important to give pneumonia vaccine because of the increasing resistance of pneumonia bacteria to antibiotics," The Joint Commission report states. "Studies show that vaccination is up to 60% effective in preventing bacterial infection. National guidelines recommend that pneumococcal vaccine be given to all patients age 65 or older and younger patients who have medical conditions associated with increased risk for pneumonia. Revaccination is recommended after five to seven years."[1-5]

Moving in right direction

Though many hospitals might miss opportunities to protect patients with an available vaccine, the 63% offering pneumococcal shots reflects an overall improvement of 14% from the previous year. The practice varies widely by state, however, ranging from a low of 44% to a high of 84%. Despite the improvement, the pneumococcal vaccine situation was one of the more disappointing findings in a report that cited many strong quality improvement trends.

"There has been improvement, but the aggregate performance is still pretty dismal," says **Jared Loeb**, PhD, executive vice president for research at The Joint Commission. "From a public health perspective, this is a clear area for improvement. It's gotten better, but the bottom line is that it is still among our poorest performance measures in terms of aggregate performance by the nation's hospitals. I don't know why this is falling through the cracks."

Offering in ED may be best approach

The best approach for hospitals may be to offer pneumococcal vaccination in the emergency department, some researchers argue.[6] "Pneumococcal bacteremia is a major cause of morbidity and mortality in the United States, with a yearly incidence estimated to be 15-30 cases per 100,000 population," they emphasize. "This vaccine-preventable disease kills more Americans than all other vaccine-preventable diseases combined, in large part, because of inadequate rates of vaccination among populations at risk."

One of the national health objectives for 2010 is to achieve 90% pneumococcal vaccination coverage among nursing home residents and adults ages 65 or older. Several methods have been developed for improving vaccine delivery, including implementing standing orders authorizing health care workers to administer the vaccine according to institutional and physician-approved protocols.

"I don't know why there hasn't been great educational efforts on the part of individual hospital leadership to this, but it is a significant problem," Loeb says. "This [Joint Commission] report is on hospital data, but it is probably even more important in nursing homes. "

Indeed, offering the vaccine actually is a patient safety goal in long-term care, but hospitals cited in the report were supposed to offer it as part of pneumonia prevention efforts. The Centers for Disease Control and Prevention has repeatedly underscored the importance of the vaccine to protect the elderly, both to protect the individual patient and to prevent outbreaks of invasive pneumococcal disease caused by *Streptococcus pneumoniae.* For example, an outbreak occurred in a New Jersey nursing home, where four unvaccinated residents died of invasive pneumococcal disease. A case control study revealed that "illness was strongly associated with lack of documentation of receipt of pneumococcal polysaccharide vaccine," the CDC concluded.[7]

Timing of antibiotics to prevent SSIs

Hospitals fared much better in another infection prevention quality measure, with The Joint Commission reporting that in 2005, 82% of 358 reporting hospitals appropriately provided surgical patients with antibiotics within an hour before the first surgical cut. The timely administration of antibiotics is known to prevent subsequent surgical site infection (SSI). However, in about 25%-50% of operations, overuse, underuse, improper timing, and inappropriate use of antibiotics occur.[8]

"[Misuse and] and improper timing of antibiotics could result in a surgical site infection, an increased risk of antibiotic resistance, an antibiotic shortage, and increased health care costs," The Joint Commission reported. Current scientific evidence calls for starting the preventive antibiotic within one hour of the first surgical skin cut, except for vancomycin or fluoroquinolone antibiotics. Those drugs should be given within two hours before the first surgical skin cut. To avoid waste and possible drug resistance, an antibiotic should generally be stopped within 24 hours post-surgery. "Giving medicine that prevents infection for more than 24 hours after the end of surgery is not helpful unless there is a specific reason (for example, fever or other signs of infection)," the report states. In 2005, 357 Joint Commission-accredited hospitals reported data for this measure and achieved overall national average performance of 74% in stopping antibiotics within 24 hours after surgery.

'Grades on classroom door'

Joint Commission-accredited hospitals are required to collect and submit data to the Commission on a minimum of three of the five core measure sets available based on the applicability of those measure sets to the services provided by the hospital and the patient populations served. The selection of measure sets is at the discretion of the hospital. The Joint Commission issued the report as part of its ongoing efforts to stimulate continuous quality and safety improvement and to empower consumers with information that will make them more active participants in their health care. The report is the first of what is to become an annual report.

"There is a fair amount of evidence that suggest that transparency improves health care quality," Loeb says. "Putting data into the public domain is often sufficient to cause processes to improve care. This is like posting grades on the classroom door."

References

1. Centers for Disease Control and Prevention. General recommendations on immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP) and the American Academy of Family Physicians (AAFP). *MMWR* 2002; 51(RR02):1-36, and *MMWR* 1997; 46(RR-8):4.
2. Bratzler DW, Houck PM, et al. Failure to vaccinate Medicare inpatients: A missed opportunity. *Arch Intern Med* 2002; 162:2,349-2,356.
3. Nguyen-Van-Tam JS, Neal KR. Clinical effectiveness, policies, and practices for influenza and pneumococcal vaccines. *Semin Respir Infect* 1999; 14:184-195.
4. Centers for Disease Control and Prevention. General recommendations on immunization; Recommendations of the Advisory Committee on Immunization Practices (ACIP) and the American Academy of Family Physicians (AAFP). *MMWR* 2002; 51(RR02):1-36.
5. Bartlett JG, Dowell SF, Mandell LA, et al. Practice guidelines for the management of community-acquired pneumonia in adults. Infectious Diseases Society of America. *Clin Infect Dis* 2000; 31:347-382.
6. Husain S, Slobodkin D, Weinstein R. Pneumococcal vaccination: Analysis of opportunities in an inner-city hospital. *Arch Intern Med* 2002; 262:1,961-1,965.
7. Centers for Disease Control and Prevention. Outbreak of pneumococcal pneumonia among unvaccinated residents of a nursing home — New Jersey, April 2001. *MMWR* 2001; 50:707-710.
8. Bratzler DW, Houck PM, Richards C, et al. Use of antimicrobial prophylaxis for major surgery baseline results from the National Surgical Infection Prevention Project. *Arch Surg* 2005; 140:174-182. ■

Joint Commission Q&A on safe tissue handling

Clarification in light of recent incidents

The Joint Commission has created some Q&A clarification of its standards regarding tissue handling and transplantation in light of some highly publicized incidents of inappropriate practices.

Last year, the Food and Drug Administration cracked down on one tissue handling facility after finding that the firm "had inadequately screened donors for risk factors for, or clinical evidence of, relevant communicable disease agents and diseases. . . . FDA regulations require that, before tissues are released for distribution, blood samples from each donor be provided to the testing laboratory for donor testing. Each sample must be clearly linked to an individual donor, and each tissue clearly linked to that donor."

With such incidents as a backdrop, The Joint Commission recently posted the following questions and answers on its web site:

Q: *What is The Joint Commission looking for in adverse tissue reaction policies?*

A: Policies addressing the investigation of adverse tissue reactions should define two essential processes:

1. Reporting potential disease transmission from the donor source facility to the patient;
2. Reporting adverse patient reactions to the donor source facility.

Reporting: Donor Source Facility to Patient

The Joint Commission encourages facilities to develop reporting policies comparable to the "look-back" procedures required for investigation of potential disease transmission in blood products. For example, this would include receipt of notification from the donor facility, determination of disposition, quarantine of donations in inventory from the indicated source, disposal, and notification of the recipient(s). The policy should specifically address HIV, HTLV-I/II, HBV and HCV, as well as other transmissible diseases, such as bacteria or fungus. Policies should define the timeframe for notification, the number of attempts required, and the notification procedure when the patient is deceased. References for policy development include the Centers for Medicare & Medicaid Services' "Conditions of Participation for Hospitals" [42 CFR 482.27(c)(4-8)] and the FDA's "Guidance for Industry" for blood establishments with regards to patient notification for HIV and HCV, respectively.

Reporting: Patient to Donor Source Facility

Similar to The Joint Commission requirements for suspected transfusion reactions, organizations need to develop policies and procedures for suspected tissue reactions. The process should be detailed and address criteria for identifying a suspected adverse tissue reaction, initial reporting internally, documented investigation of the complication, and prompt reporting to the donor source facility. When developing their process, organizations should keep in mind that symptoms of an adverse reaction could present as an acute or chronic condition (i.e., fever vs. hepatitis). Other examples of adverse reactions or complications could include, but are not limited to, infection (viral, bacterial, fungal), graft failure, or immune response to the tissue. Organization's can work with their donor source facilities to establish their reporting policies.

Interested organizations may wish to review the FDA regulations for current good tissue practice or participate in MedWatch, the FDA's reporting system for adverse events, product use errors and product quality problems associated with medical products.

Q: *We sometimes send tissue to another healthcare organization. Does this make us a source facility?*

A: Yes. The FDA would consider a routine policy or practice of shipping tissue to another facility the activity of a manufacturer, even if it is infrequent. Such facilities are required to register with the FDA within five days of beginning operations and to update their registration every December. Registered facilities must comply with those federal regulations applicable to the operations that they perform. This is a free registration, available at the following web site: http://www.fda.gov/cber/tissue/tisreg.htm.

Note: Returning unused tissue back to the source facility is not considered distribution and does not require FDA registration. Also, FDA registration would not be required in the rare and well documented urgent situation. However, such urgent situations should be the exception to the rule. If there is a routine pattern of distribution,

the FDA would require registration.

Q: *What are we required to do when receiving tissue?*

A: Upon receipt of tissue, the organization should verify and document that the recommended temperatures and the integrity of the individual tissue packaging have been maintained during transport. Many distributors use validated shipping containers that have been tested to maintain the recommended temperature for a specified period of time. Often, the distributor can provide documentation for the organization to have on file regarding the specifications. When the tissue arrives through the routine shipping process, the receiver may then check that the shipping container was received undamaged and within the validated timeframe. Other checks could include noting the presence of any remaining regular or dry ice, taking the temperature within the box (in the center of the products) upon opening, or use of a commercial shipping temperature indicator.

Q: *What is The Joint Commission looking for in regards to verification of registration and licensing of tissue suppliers?*

A: The source facility should be registered with the FDA and licensed by the state, if the state in which the implanting organization resides requires licensure.

Annual registration is required by the FDA each December for all tissue suppliers who recover, screen, test, process, label, package, or distribute tissues. Suppliers are expected to be compliant with the FDA regulations that apply to their operations. Health care organizations that only receive and store tissues for implantation or transplantation within their facility are not required to be registered with the FDA.

Licensing is state-dependent. As of March 2007, five states require licensing, which include New York, Florida, California, Georgia, and Maryland.

The Joint Commission standards can be met by requesting from the source facility copies of their current state license (when applicable) and FDA registration and keeping them on file. For FDA registration, the supplier's registration status also may be checked annually by using the FDA's online database.

Q: *How do we determine if our record keeping permits traceability of implanted tissue?*

A: The organization will need to be able to trace the chain of events or "audit trail" related to implanted tissue for both reporting and investigational purposes. Records should permit bidirectional tracing of any tissue in order to:

1. report potential disease transmission to the recipient when notified by the donor source facility;
2. report adverse patient reactions to the donor source facility;
3. investigate the chain of events, e.g. who handled the tissue, how it was transported, stored and processed, dates and times of such activities.

An organization could become aware of the potential for an adverse event from either the donor facility or the recipient. For example, the donor facility may notify the organization of a suspected infectious disease associated with a particular tissue source. The organization would need to promptly identify and notify all recipients and quarantine any implicated tissue not yet implanted. Alternatively, the patient's physician might notify the infection control nurse of a post-op infection associated with the tissue implant. Procedures and records should allow the organization to determine the tissue's unique identifier and enable reporting of the event to the source facility. In addition, records should facilitate an investigation to determine if the post-op infection could be related to the organization's storage or handling processes, e.g., use of sterile reconstitution supplies, OR procedures, storage temperatures, expiration dates, etc.

Q: *What is considered tissue under the Tissue Storage and Issuance standards?*

A: The Tissue Storage and Issuance standards apply to human and nonhuman cellular-based implantable and transplantable products. Examples of tissue specimens that might be found in an organization include, bone, cornea, skin, heart valves/conduits, tendons, fascia, dura, bone marrow, veins, arteries, cartilage, sperm, embryos, eggs, stem cells, cord blood, synthetic tissue (artificially prepared, human and nonhuman cellular based products), and other cellular and tissue based transplant or implant products.

Collagen or certain synthetic tissues, such as those derived from plastics and polymers, are not considered cellular based products and are not evaluated under the Tissue Storage and Issuance standards.

For autologous tissue, the standards and accompanying elements of performance apply to the extent that they are relevant. Also, if your state classifies something as a tissue that is beyond what The Joint Commission defines as tissue, the standards and accompanying elements of performance would apply to the organizations of that particular state. ■