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INSIDE

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Research indicates night shift workers are at high risk for cancer and heart disease

Many employees are chronically sleep-deprived

If an employee complained about fatigue, insomnia, or difficulty concentrating, you would probably suspect their health problem was due to working the night shift. But what if that worker was diagnosed with cancer?

New evidence of increased cancer rates in night shift employees resulted in overnight shift work being added as a "probable carcinogen" by the International Agency for Research on Cancer (IARC), the cancer arm of the World Health Organization.[1] According to 2001 data from the Bureau of Labor Statistics, almost 15 million Americans work evening, night, rotating, or other irregular schedules.

"We know that there are very definite problems that have long been associated with shift work, including hypertension, obesity, and heart disease," says **Michael Smolensky**, PhD, professor of environmental physiology at the University of Texas School of Public Health in Houston.[2,3] "These types of complaints haven't usually been linked to night shift work, but this is coming to the attention of a lot of people right now."

Previous research found links between night shift work and breast and prostate cancer.[4,5] Scientists suspect that overnight work is dangerous because it disrupts the circadian rhythm, disturbs the body's biological clock, and may result in lower melatonin levels, which can increase can-

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Overnight shift work was added as a "probable carcinogen" by the International Agency for Research on Cancer due to growing evidence of a link between cancer and night shift work. Night shift workers are also at higher risk for hypertension, obesity, and heart disease.

- Keep night shift workers updated on the research.
- Avoid alternating prolonged day and night shifts.
- Discourage workers from taking long-term melatonin supplements, and encourage them to sleep in a darkened room.

cer risks, says **Mark Rea**, director of the Lighting Research Center at Rensselaer Polytechnic Institute in Troy, NY. "The employee's biological clock is being negatively affected," Rea says. "Each cell in the body has a time to perform a particular function, and if you upset that, it is not a healthy thing."

This research is the first strong evidence for a cancer risk for night shift workers, notes **Richard Stevens**, a cancer epidemiologist and professor at the University of Connecticut Health Center in Farmington. "More research must be done to further specify the magnitude of that risk and what can be done to lower it," Stevens says.

Despite the unanswered questions, occupational health nurses should, at a minimum, keep night shift workers updated on the new research, says **Jere Zimmerman**, director of environmental health and safety for Coors in Golden, CO. Occupational health managers at Coors were sent a memo on the study and asked to share the information with employees, says Zimmerman. "We feel employees have a right to be informed. Therefore, when this study was published, we provided our shift workers with the study results," says Zimmerman. "We feel each individual should make up their own minds. We have encouraged concerned employees to seek the advice of their medical doctor if they have concerns." **(For recommended interventions for night shift workers, see related story on p. 12.)**

At Cincinnati-based Proctor & Gamble, occupational health professionals are evaluating the IARC's report, says spokesman **Doug Shelton**. "We want to ensure we have the right approach to protecting the health and well-being of our employees," Shelton says. "We will communicate our findings to employees as soon as we have completed our analysis."

Surprisingly, many occupational health professionals are unaware of the health risks of night shift work, says Smolensky. "I get calls from occupational health doctors who wonder why workers are complaining about inability to sleep or depression," he says. "They want to know if they're for real or are they pulling our leg to get off on workers' comp. There is not a lot of familiarity with this. Occupational health professionals don't really understand the health concerns and what to look out for with these workers."

When addressing health risks of night shift workers, consider the following:

• **Workers who switch between day and night work may be at even higher risk.**

"If people work the night shift irregularly for a few days on and off, that appears to be particularly detrimental," says Rea. "It appears that this shifting back and forth confuses the body. If you can stay anchored in a 'day shift world' but spend a few nights working, that appears less problematic."

Most night shift workers are not willing to convert to a completely "night shift world," says Rea. In this case, he says, it's probably better to reduce the number of nights on the night shift, such as doing two nights, then taking three to five days off. "Your body usually wants to stay on a day shift. So as long as you have an anchor to come back to, it's better if you do rotating shift work," says Rea. "The worst thing you can do is prolonged night shift with prolonged day shift; that is a very irregular pattern to avoid."

• **Long-term melatonin supplements aren't recommended**.

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Exposure to light while working at night inhibits melatonin production, which is not good because it has oncologic preventive properties, says Smolensky. So should night shift workers take melatonin supplements?

"It's not a good idea to take melatonin on a regular basis because it is a hormone and a pill spikes melatonin far higher than is normal," says Stevens. "It is better to live a 'melatonin-friendly' lifestyle by getting eight or nine hours of dark, exercise in the morning, and a good diet."

Likewise, there is no evidence that exposure to bright lights during a night shift is helpful, says Rea. "That might not be a good idea, unless, again, you are willing to completely change your life over so you are awake at night and asleep during the day. And most people are unwilling to do that," he says.

• Workers are at higher risk for accidents.

Night shift work is linked to an increased risk of automobile and workplace accidents, says Smolensky.[6,7] In addition, research on workers' comp claims found that there were increased filings and greater cost per accident for the night shift, he says.[8]

"Some of these accidents are the result of disruption in circadian rhythms, which impact hand-eye coordination and cause fatigue," says Smolensky.

• Sleep deprivation could be a factor in increased cancer risk.

If employees are not getting enough sleep, their immune system is vulnerable to attack, and they are less able to fight off potentially cancerous cells, says Rea.

Many night shift workers only get four to five hours sleep a night, so they are chronically sleep-deprived, says Smolensky. "A lot of people who work the night shift eventually have problems sleeping. Often, they resort to using alcohol or over-the-counter medications, which causes more problems."

When night shift workers get off work, sleeping in a darkened room can help stave off insomnia, says Stevens. "It is best to sleep in a very dark place and keep it dark for eight or nine hours if possible," he says.

RESOURCES

For more information on health risks for night shift workers, contact:

• The National Institute for Occupational Safety & Health has a variety of publications and other resources for shift workers on its web site (www.cdc.gov/niosh). At the top, click on "All NIOSH Topics" and then "Work Schedules: Shift Work and Long Work Hours."

• The National Sleep Foundation offers recommendations for employees who work the night shift on its web site (www.sleepfoundation.org). Under the "Resources" box on the left side of the page, click on "Topics: A to Zzzzs" and scroll down and click on "Shift Work" and then "Strategies for Shift Workers."

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These interventions may help night shift workers

Promote good sleep and dietary habits

With evidence mounting of links between serious medical conditions and night shift work, you should evaluate your shift work policies and practices to make sure they adhere to recommended best practices, such as minimizing schedule disruptions, says **Robert Emery**, DrPH,

assistant vice president for safety, health, environment, and risk management at the University of Texas Health Science Center at Houston.

"There are several well-known issues inherent to shift work," he says. "You might as well take this opportunity to make sure you're addressing those, while other investigations in this issue play out."

Actively communicate with workers through newsletters and other correspondence to make them aware of the study, its limitations, and the need for more controlled studies; then provide reminders about suggested healthy habits, advises Emery.

The linking of night shift work to cancer is now one more problem occupational health professionals will have to address, without being able to control the lifestyle or dietary decisions of employees, says **Kathy Ohlmann**, RN, MSN, COHN-S, a sleep educator at Work Place Solutions, a Louisville, KY-based company specializing in health and safety concerns in the workplace. Your job is to provide employees with a safe working environment based on the latest research and information available, says Ohlmann. The rest is the employee's job, she says.

It's not known whether the night shift employees diagnosed with cancer followed healthy lifestyle choices, such as getting more than a few hours of sleep during their off time or eating healthy foods, says Ohlmann. "The role of the occupational health professional is to balance the good of the company with the safety and well-being of the employee," she says. "Sometimes that's a real difficult balancing act." Ohlmann recommends these interventions for occupational health professionals:

• Perform an ongoing evaluation of the benefits of night shift work to the company, and assess the impact on employee health.

• Monitor the health status of employees, and promote wellness programs with preventive screenings for all employees, including those on the night shift.

• Promote healthy food choices around the clock in vending machines, cafeterias, and break rooms.

• Educate employees on the importance of sleep, the effect of sleep deprivation on the body, and alternate ways to protect the needs of the body when sleep is altered. "This should include the families of those affected, as well, since it's a lifestyle to work other than dayshift," Ohlmann says.

• Assess the impact of work shift scheduling on safety, health, and productivity.

The effect on an individual employee from working nightshift varies widely depending on many variables, such as length of shifts, number of shifts worked before a rest day, and number of rest days and weekend shifts, says Ohlmann. Other considerations are the amount of rest taken between shifts, the amount of rests during shifts, and the regularity and predictability of the schedule, she says. "All of these factors can affect the amount of stress and fatigue the individual feels because of the work schedule," says Ohlmann. "If people experience added stress and fatigue, they may not do the job safely and efficiently, or they may develop health issues." ■

EXECUTIVE SUMMARY

Assess policies and practices for shift workers to be sure they follow best practices, in light of new evidence of health risks for night shift workers.
• Give workers reminders about the importance of sleep.
• Promote wellness with preventive screenings of employees.
• Evaluate the impact of scheduling on safety and productivity.

Treatment may help workers with arthritis

Workers need accommodations, rarely get them

Treatment with a tumor necrosis factor (TNF) alpha blocker may help keep workers with rheumatoid arthritis (RA) employed, at least those with disease duration of 10 years or less, says a new study.[1]

"Initially, we didn't find any effect in use of those drugs in helping people maintain employment; but in further analyses, it does look like it helps people with shorter disease duration stay employed," says **Saralynn Allaire**, ScD, the study's lead author and a researcher with Boston University School of Medicine.

The reason the medication might not help people with longer duration is that some of the

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Tumor necrosis factor alpha blockers may be effective in keeping workers with rheumatoid arthritis employed, but only if the disease duration is 10 years or less.
- With longer duration some effects become permanent, so no treatment is effective.
- Offer accommodations to workers with rheumatoid arthritis.
- Cutting back hours to part-time isn't an effective way to maintain employment.

effects become permanent, and no new treatment can offset those changes, says Allaire.

It's been known for a long time that people with rheumatoid arthritis who stop working do so in part because of the type of work that they do, which is generally physically demanding, says Allaire. For this reason, it's key for occupational health nurses to offer accommodations to these employees, she stresses.

Typically, people with arthritis don't consider themselves disabled, and may not realize that they have the right to ask for accommodations, says Allaire. "Instead, they tend to cut back and go part-time," she says. "But studies suggest that's not an effective solution to help people maintain employment. Instead, it's sort of a marker of exit from the workplace, and people become less committed to working."

Employees with musculoskeletal conditions, including rheumatoid arthritis, hardly ever receive accommodations, adds Allaire. "They are reluctant to ask for them, because then they have to disclose their condition. There is a lot of fear about that," she says. "Then people get upset with their coworkers because either they need help but don't ask for it, or in some cases, they ask for help and don't get it."

Under the Americans with Disability Act, employers can't reveal the condition to coworkers without permission, but resentment may occur if there is no explanation about why a worker is receiving accommodations, says Allaire. "People worry about that upfront, which is one reason they don't ask for accommodations in the first place," she says.

Since early rheumatoid arthritis is not a very visible disease, employees may have a lot of pain and stiffness that their coworkers can't see, says Allaire. "Sit down with the employee and discuss issues of working with other people. Then make a plan of action for what to do," she says.

Reference

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Surgery or injections: Which is the better option?

Consider costs, complications for carpal tunnel

Over the long term, surgery may be a better treatment option than local injections of corticosteroids when treating carpal tunnel syndrome, according to a recent study.[1]

Researchers assessed long-term outcomes of surgery and corticosteroid injections in carpal tunnel sufferers. After three months, local injections were better than surgery. At the one-year mark, both treatments were equally effective; at the seven-year mark, however, surgery showed better results.

"Nonetheless, more than 50% of the initially injected wrists did not need further treatment," says **Domingo Ly-Pen**, MD, PhD, the study's lead investigator and a family physician at Gandhi Health Center in Madrid, Spain.

In addition, surgery is more likely to have a higher complication rate than a less invasive procedure such as injection, notes **Shawn Marshall**, MD, a specialist in physical medicine and rehabilitation at the University of Ottawa.

Direct and indirect costs also must be taken into account. For instance, patients are often unable to work for a number of weeks post-surgery, whereas post-injection this is not the case, says Marshall. "It may be worthwhile to do an economic health evaluation before considering surgery as definitive treatment for all cases," he says.

The study's findings actually suggest that injections should be used for initial treatment, says **Kurt T. Hegmann**, MD, MPH, director of the Salt Lake City-based Rocky Mountain Center for Occupational & Environmental

EXECUTIVE SUMMARY

In recent research, surgery was a better long-term option for some employees with carpal tunnel syndrome at the seven-year mark, but symptoms did not recur in more than half of individuals who received corticosteroid injections.
- Duration and severity of symptoms must be taken into account.
- Indirect costs of surgery include recovery time for employees.
- Workers are more likely to have complications with surgery.

Health. "Most patients getting an injection never needed additional treatment," he says. "If the symptoms return, the treatment options begin to switch, and surgery becomes a more likely requirement if more injections are required. If they were my hands, I would opt for an injection."

In addition, other more conservative treatments often help decrease or eliminate symptoms and the need for surgery, notes **Joanne Kassimir**, OTR, CHT, a Huntington Station, NY-based certified hand therapist. "Occupational health nurses may not consider the conservative treatments that my colleagues and I use effectively on a daily basis," she says. "Splinting helps, in conjunction with anti-inflammatory treatment and patient education, regarding proper posturing."

Kassimir says the best treatment for an individual depends on many factors: an individual's anatomy, the hand and wrist posture for tasks such as typing or grasping objects, severity and duration of symptoms, and willingness to follow a home exercise and splinting programs.

"Carpal tunnel syndrome is a common diagnosis, but no one treatment is right for everyone," she says. "Each case is different and needs to be evaluated thoroughly to determine the right course of treatment."

Reference

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Are you in 'employee health' or 'occ health'?

Question: What's the difference between an employee health nurse and an occupational health nurse?

Answer: "Occupational health" is a specialty with certification that requires knowledge of workers' compensation, injury prevention, and wellness.

It may sound like mere semantics. But the distinction between "employee health" and "occupational health" is an important one in a high-hazard field.

As hospitals seek to contain workers' compensation costs and retain workers, there's a new push to elevate the training and professionalism of hospital employee health nurses. Many hospitals offer occupational health services to local businesses and industrial plants. However, internally, their program may be confined to regulatory compliance (vaccination, TB screening, bloodborne pathogen follow-up) rather than injury prevention, notes **Larry Gray**, AIC, executive vice president, property and casualty, for PHT Services, a risk management alliance and workers' compensation pool for hospitals and other health care employers in Columbia, SC.

Last fall, PHT Services encouraged its member hospitals to send employee health nurses to a "boot camp" organized by the American Association for Occupational Health Nurses (AAOHN) for a refresher on occupational health basics. "When it comes to employee safety, health care tends to lag what they're doing in industry by 10 or 20 years," says Gray. "This is one of those prime examples. The typical employee health nurse is promoted into employee health usually from the floor in the hospital and doesn't really know anything about workers' compensation. We do our best to educate them. But they certainly don't have, in most cases, any occupational health background whatsoever."

The nurses themselves aren't the only ones who may take a narrow view of their role. The Association of Occupational Health Professionals in Healthcare (AOHP) seeks to educate hospital CEOs, as well, by sending them letters each year during Occupational Health Nurses' Week. **Denise Knoblauch**, RN, BSN, COHN-S/CM, president emeritus of AOHP and clinical case

manager at the Center for Occupational Health at the Saint Francis Medical Center in Peoria, IL, says, "I focused on the challenges in health care, [asking them,] 'Do you have someone who takes care of your people and keeps them well and safe?'

In fact, when AOHP formed 26 years ago, it set out a mission to professionalize the hospital-based employee health nurse. Today, AOHP continues to educate nurses about such issues as making a business case for employee health. "We are not the TB test nurses anymore," says Knoblauch.

In many hospitals, employee health nurses also are responsible for workers' compensation programs. Even if they aren't, their activities influence accident prevention and return to work, says Gray. For example, they should conduct root cause analysis of significant injuries to determine how to prevent future incidents, he says. Hospital employee health nurses should be looking for trends in injuries and reporting them to the safety committee and risk manager, he says.

Employee health nurses also should identify themselves with the larger specialty field, says **Dean Burgess**, MSN, RN, COHN-S, director of professional affairs for AAOHN. "'Employee health nurses' and 'occupational health nurses' are synonymous [terms]," says Burgess. "Occupational health nurses take care of employees and workers populations. In the hospital environment, they're termed employee health, but they're still occupational health nurses."

Seeking certification is one way to demonstrate competence and knowledge in workers' compensation and other occupational health areas. The American Board for Occupational Health Nurses (ABOHN) in Hinsdale, IL, set a goal of certifying 500 new hospital employee health nurses over a two-year period. To be a certified occupational health nurse (COHN), you must be a licensed registered nurse, have 4,000 hours of occupational health experience in the past five years, and at least 50 hours of continuing education in the past five years. Nurses with a bachelor's degree may receive the designation COHN-S.

Hospital employee health nurses often don't seek certification, but when they do, they typically score well on the certification exam, says **Ann Lachat**, RN, BSN, COHN-S/CM, executive director of ABOHN. "There are a lot of hospitals that don't have certified employee health nurses on board," she says.

Certification requires an understanding of injury prevention, biological, chemical and physical hazards, disease management, and regulations. "They need to know the whole scope and practice of an occupational health nurse," she says. With a designation of COHN, the nurses also are qualified to work in occupational health in other industries, she notes.

[Editor's note: More information on COHN certification is available at www.abohn.org. Click on "certification." More information about occupational health educational programs is available at www.aohp.org (click on "education") and www.aaohn.org (click on "continuing education").] ■

As flu season hits, remember accreditation requirement

Immunization standard in place for health workers

Occupational health professionals are reminded that a new standard from The Joint Commission requires accredited organizations to offer influenza vaccinations to staff. The Joint Commission requires that all accredited hospitals and long-term care accreditation programs:

- establish an annual influenza vaccination program that includes at least staff and licensed independent practitioners;
- provide access to influenza vaccinations on site;
- educate staff and licensed independent practitioners about flu vaccination; nonvaccine control measures (such as the use of appropriate precautions); and diagnosis, transmission, and potential impact of influenza;
- annually evaluate vaccination rates and reasons for nonparticipation in the organization's immunization program;
- implement enhancements to the program to increase participation.

The Joint Commission's new standard stops short of setting a required percentage of immunizations or requiring declination statements for those who decline the vaccine. However, surveyors will expect to see immunization rates to be rising as part of enforcement of the standard. The Joint Commission joins several other organizations in addressing the historic problem of laggard staff immunization rates in the health care population. The Association for Professionals in Infection Control and Epidemiology has come out in favor of mandatory seasonal flu vaccinations for patient caregivers. The Society for

Healthcare Epidemiology of America is calling for workers to sign off on declination statements if they turn down the shot. The Centers for Disease Control and Prevention (CDC) also puts declination statements on the table as an option.

There is no shortage of vaccine, as manufacturers are expected to increase last flu season's total by 12 million and distribute 132 million flu vaccine doses this season. Yet less than half of health care workers get the annual shot, and they cite a range of reasons and myths that have dogged the issue for decades. Some mistakenly think the vaccine can somehow give them the flu, while others do not understand they can transmit influenza before the onset of symptoms. There was little sympathy for this lingering mindset at a news conference at the National Foundation for Infectious Diseases in Bethesda, MD.

"We cannot be complacent [about] health care workers who fail to get the vaccination. It protects the personnel and their families," said **Julie Gerberding**, MD, MPH, director of the CDC. "Also, it works in the opposite direction: The health care worker brings the virus to work and puts patients at risk. It's unconscionable that they don't receive the influenza vaccine."

Consequently, unvaccinated health care workers not only risk contracting flu, but also can transmit the disease to patients and family members. **William Schaffner**, MD, chairman of the Department of Preventive Medicine at the Vanderbilt University School of Medicine in Nashville, TN, says, "Many health care workers simply state, 'When I get sick, I'll stay home; I won't make others sick.' However, the day before you feel sick, you are already covering your patients with the influenza virus."

Jeanne M. Santoli, MD, MPH, deputy director of the immunization services division at the CDC, stated that only 40% of health care workers receive vaccinations in anticipation of the influenza season. (Likewise, only 20% of caregivers in general receive an influenza vaccine according to **Kerry Weems**, acting administrator of the Centers for Medicare & Medicaid Services.) Unfortunately, health care workers also are subject to the illness regardless of present health. "Some people think they are very healthy and are not aware of the risk of infection," said Santoli. "There is a knowledge gap."

'We don't need wounded healers'

In a separate interview, **Robert M. Jacobson**, MD, chairman of the Department of Pediatrics and Adolescent Medicine at the Mayo Clinic in Rochester, MN, emphasized that health care workers should not report to work if they have flu symptoms.

"We don't need wounded healers," he said. "If you can't control your secretions, stay at home. It's not a badge of honor."

Jacobson has written editorials emphasizing his belief that all health care workers should be vaccinated. "It should be universal and required," he said. "Anyone working in a health care institution, whether on the phone, working with test tubes, or greeting patients, should be vaccinated. We need to protect our patients, and it is proper role modeling."

Unvaccinated health care workers not only risk contracting and experiencing influenza, but also can transmit the disease to patients and family members. A person with influenza is contagious for up to five days after infection, and children remain contagious for up to 10 days after infection with the virus. This timetable has particular impact upon the most vulnerable patients, including the elderly, patients with chronic health conditions such as asthma and diabetes, infants and children, and pregnant patients. Specifically, children have been known to be primary carriers of the disease in the general community. "Children are often in larger groups, while the elderly rarely are," said Jacobson.

Influenza vaccination of health care workers also assists in supporting the immunity of patients who cannot receive vaccination due to egg allergy. The "halo effect" is provided to a susceptible patient by vaccination of family, friends, and those in contact with the unvaccinated person. The influenza vaccine available this year, in both injection and nasal spray forms, will cover three strains: influenza B, H1N1, and H3N2, which were the most common at the end of last season. Although identification of the exact strain to affect this season is an unknown, receiving an influenza vaccination will minimize the extent of illness once contracted regardless of strain. The vaccine nasal spray is contraindicated in pregnant women.

Tell health care workers: It's a serious disease

Health care workers need to be aware of the serious nature of influenza, which can lead to fever, cough, chills, fatigue, and muscle pain. Influenza should not be confused with stomach flu, although children also may experience nausea and vomiting. An advanced state of influenza can

10 tips to stop spread of the flu

1. All health care workers, regardless of patient exposure, need to be vaccinated against influenza.
2. Wash hands frequently, specifically before and after patient contact.
3. Avoid contact with own eyes, nose, and mouth.
4. Provide immediate triage or isolate/segregate contagious patients.
5. Provide contagious patients with mask and disinfecting hand gel.
6. Give patients with respiratory symptoms tissues and ask them to cover coughs and practice respiratory etiquette.
7. Disinfect surfaces that are likely sources of respiratory secretions by infected patients.
8. Encourage "single-use" child toys, or disinfect available toys after every use.
9. Encourage patients and families to get influenza vaccine.
10. When you're sick, stay at home!

lead to pneumonia, dehydration, bacteremia, meningitis, myocarditis, rhabdomyolysis, encephalopathy, and encephalitis, prolonged seizures, and renal failure. An estimated 36,000 people die of influenza annually.

The risk of health care worker exposure is great, since most people still do not elect to receive an influenza vaccination. The highest rate of vaccination is in the senior population, with 69% of those who are 65 years and older getting an influenza shot, according to Santoli. The statistics for other patient populations are worse: Only 37% of those between the ages of 50 to 64 years and 31% of those at high risk in the 18- to 49-year-old age group reported receiving a flu shot.

"In the pediatric population, only about one-third of those aged 6 to 23 months received a flu shot in 2005-2006. Only two-thirds received the full dose," said Santoli. "In all children less than two years old, only one-fifth were fully protected."

The influenza vaccination rate in children is not surprising to Jacobson though, given that it is a relatively new indication in this patient population and the time-dependent nature of the vaccination. "The problem with the influenza vaccine, unlike all other vaccines, is that this one has to be given during flu season," said Jacobson.

To minimize exposure to patients with influenza, health care workers should consider triaging and providing masks and hand disinfectants to contagious patients. If suspected flu patients cannot be isolated from common areas, they also can be provided with tissues and asked to cover their coughs, under the general "respiratory etiquette" guidelines recommended by the CDC. Surfaces that are possible sources for respiratory secretions should be disinfected as soon as possible.

Vaccinations should be offered until supplies run out in March, whichever comes first. The continuance of vaccination is important because a disease can revisit a community, said Santoli. "The peak of disease is January or February or even later," she said.

At least one public health department (in Seattle and King County, WA) has specific rules on return to employment for those with influenza. Workers who have had influenza are advised to wait to return to work for at least five days from onset of symptoms with resolution of fever and improvement of cough. Since mandating influenza vaccinations as a term of employment appears to be rarely required in institutions, action ultimately may come at the state level. Santoli said there has been some discussion about mandatory health care worker vaccination. The vaccination should extend beyond medical doctors and nurses to emergency department responders, technicians, and others who work in health care settings, she said. According to Santoli, 15 states have regulations regarding vaccination of health care providers in long-term care facilities. Three states require health care facilities to offer flu vaccine to health care providers, and three states require that health care providers get the influenza vaccine unless they have a religious, medical, or philosophical reason not to do so.

"Some states have laws in long-term care facilities where every patient is a high-risk patient," said Santoli. "There has been a lot of discussion among provider groups as well." ■

NIOSH sets 35-lb limit as the max for safe lifts

Manual lifts of patients aren't safe

A 180-pound patient is partially dependent, able to lift only about half his weight. He's in

a chair and needs help standing. How many nurses would it take to help him safely if they have no lift equipment?

The answer: three. A new recommended weight limit for manual lifting for health care workers, calculated from the National Institute for Occupational Safety and Health (NIOSH) Lifting Equation, sets the recommended maximum lift per nurse at 35 pounds.

If only two nurses helped the 180-pound partially dependent patient, they would each be lifting the equivalent of 45 pounds. Yet one nurse could help the patient with a sit-to-stand device, notes **Tom Waters**, PhD, research safety engineer in the NIOSH Division of Applied Research and Technology in Cincinnati. "Almost all lifts of people are going to exceed the maximum recommended weight limit [for manual lifting]," says Waters, who created the original NIOSH lifting limit of 51 pounds for a static box under ideal conditions.

Needless to say, patients are not shaped like a box and usually aren't lifted under ideal conditions. An object should be held as close to the body as possible during a safe lift. In the health care calculations, however, Waters assumed that the health care worker would need to hold her arms at a 90-degree angle, with elbows by her side, for the best possible lift.

In fact, safe manual lifting is a matter of physics. The distance lifted, the vertical height, and the frequency of lifts are factors in addition to the weight. Lifting someone off the floor is one of the riskiest lifts that health care workers perform, Waters says.

Health care workers can use the lifting limit to determine when they need safety equipment. For example, if a nurse is holding a patient's leg to prepare it for surgery, how heavy is that lift? A leg weighs about 16% of total body weight, or about 39 pounds for a 250-pound person. If the patient weighs 250 pounds or more, the nurse will need to use equipment to lift the leg, or a second nurse will need to help hold it.

"They need to have an awareness of the risk they're facing," says **Nancy Hughes**, MS, RN, director of the Center for Occupational and Environmental Health at the American Nurses Association in Silver Spring, MD.

When health care workers assess the need for lift equipment, they also need to estimate how much of the patient's weight they are bearing, she notes. "Just because there are two people [performing the lift] doesn't mean they're sharing the load equally," she says.

If a patient is combative or uncooperative, the lift limit would be even lower. The limit also applies to other lifts in health care, such as lifting heavy equipment, says Waters. "There is a maximum weight limit [for a safe lift]," he says. "If you exceed that, you are putting yourself at risk."

The limits are not only good for workers, but help the health care facility's bottom line, notes Waters.

"There is evidence that programs relying on lift equipment can pay for themselves by preventing back problems for nurses," he says. ■

Invasive MRSA rises in the community

Infection prevention a huge challenge

While the news that methicillin-resistant *Staphylococcus aureus* (MRSA) had eclipsed the annual death toll of HIV drew most of the attention, there was another disturbing finding in a recently published study that was largely overlooked: Nearly 14% of the invasive MRSA cases found were acquired in the community.

Researchers at the Centers for Disease Control and Prevention (CDC) analyzed population-based surveillance data for invasive MRSA infections in nine sites participating in the Active Bacterial Core system. Of the 8,987 observed cases of invasive MRSA 1,234 (13.7%) were considered community-associated.[1]

"The community-associated cases were defined as those with no documented health care risk factor. The majority of those were USA300, so we know that strain evolved de novo in the community," says **R. Monina Klevens**, DDS, MPH, lead author of the study and an epidemiologist in the CDC's Division of Health Care Quality Promotion. There were concerns that community-associated infections were occurring frequently, and they wanted a measurement. No one should trivialize 14%, Klevens says. "When you just look at the community-associated cases, the rate is 4.6 per 100,000 [people]," Klevens says. "That's a lot."

The study found that (58%) of MRSA cases were among patients who had health care risk factors but community onset of disease. Most of those patients had the USA100 genotype, a typical hospi-

tal strain; however, some of those cases were caused by USA300 and also could have been community-acquired, adds **Elizabeth A. Bancroft**, MD, a medical epidemiologist at the Los Angeles County health department, who wrote an accompanying editorial to the study.[2]

"When you look at strain typing, it still appears the majority are hospital strains, but there was a significant minority that had the community strain," she says. "So it wouldn't surprise me if some of those that were classified as health care associated really were purely community acquired. The fact that the person had surgery three months before had absolutely nothing to do with their invasive disease."

Strategies to prevent sporadic community-associated MRSA are not as well described as hospital measures, though hand washing, not sharing personal items, and keeping wounds clean, dry, and covered are commonly mentioned prevention methods, she noted in the editorial. Indeed, the findings not only raise concerns about how fast CA-MRSA is emerging — the CDC reported some of the first cases in 1999 — but beg the difficult question of how to stop staph transmission in the community.

Society needs to recognize that the control measures that can even be envisioned for CA-MRSA are problematic at best, says **William Jarvis**, MD, a former leading CDC hospital outbreak investigator, now in private consulting at Jason and Jarvis Associates in Hilton Head, SC. Consider the examples of prisons, intravenous drug users, and the homeless, Jarvis says. "How are you going to improve hygiene; reduce close contacts; prevent sharing of towels, soap, and needles that lead to transmission of MRSA?" he says. Infection control in the community is problematic, Jarvis says. "I've not seen any data by anybody that has shown effective control measures [among such community populations who] are incubating and transmitting MRSA," he says. "[They will] increase the burden of disease and allow it to get into other populations."

Complicating the issue, the typically proposed solution of controlling antibiotic use is unlikely to have much impact on the rise of MRSA in the community, particularly among the aforementioned high-risk groups, Jarvis says. "There has been a lot of talk about antibiotic controls, but in the majority of studies of CA-MRSA antibiotics have not been a risk factor. So to say antibiotic controls are going to have impact on the community-acquired cases is ridiculous," he says. "[Improved] hygiene is really the only way."

References

1. Klevens RM, Morrian MA, Nadle J. Invasive methicillin-resistant *Staphylococcus aureus* infections in the United States. *JAMA* 2007; 298:1,763-1,771.
2. Bancroft EA. Editorial: Antimicrobial resistance — It's not just for hospitals. *JAMA* 2007; 298:1,803-1,804. ■

CE Objectives / Instructions

The CE objectives for *Occupational Health Management* are to help nurses and other occupational health professionals to:

- Develop employee wellness and prevention programs to improve employee health and productivity.
- Identify employee health trends and issues.
- Comply with OSHA and other federal regulations regarding employee health and safety.

Nurses and other professionals 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.

After completing this semester's activity, you must complete the evaluation form provided in the June issue and return it in the reply envelope provided in order to receive a letter of credit. When your evaluation is received, a letter of credit will be mailed to you. ■

COMING IN FUTURE MONTHS

- Show your employer how to combat top health care costs
- Demonstrate return on investment for wellness
- Dramatically reduce obesity-related absenteeism
- Proven ways to mark 1,000 days without a workplace accident

CE *questions*

5. Which is an effective way for night shift employees to prevent sleep deprivation and insomnia?
   A. Sleeping in a room with natural light during daytime hours.
   B. Taking long-term melatonin supplements.
   C. Sleeping in a darkened room for eight or nine hours.
   D. Alternating prolonged day and night shifts.

6. Which is recommended regarding interventions for night shift workers?
   A. Evaluate the benefits of night shift work to the company.
   B. Monitor the health status of employees.
   C. Promote healthy food choice around the clock.
   D. All of the above.

7. Which is true regarding workers with rheumatoid arthritis, according to a study presented at the American College of Rheumatology Annual Scientific Meeting?
   A. Treatment with a tumor necrosis factor (TNF)-alpha blocker may help to keep workers employed.
   B. Treatment with TNF-alpha blocker helped only those workers with disease duration more than 10 years.
   C. The longer the disease duration, the more effective the treatment.
   D. When workers cut back to part-time hours, they are more likely to maintain employment.

8. Which is true regarding treatment for carpal tunnel, based on research presented at the American College of Rheumatology Annual Scientific Meeting?
   A. Surgery is always the better option.
   B. Surgery is a worse option even if symptoms return.
   C. Almost all patients receiving injections required additional treatment.
   D. Fewer patients who underwent surgery required additional treatment.

Answers: 5. C; 6. D; 7. A; 8. D.