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THE PRACTICAL GUIDE TO KEEPING HEALTH CARE WORKERS HEALTHY

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IN THIS ISSUE

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The thin white line: H1N1 flu threatens hospital work force

EHPs seek to provide protection, post-exposure response

As waves of novel H1N1 influenza swept communities across the country, hospitals struggled to avoid the potential impact of infected health care workers: Absenteeism, short-staffed units, and severe illness.

A California nurse died of complications from H1N1 in July, the first reported death among U.S. health care workers. The 51-year-old nurse had been a previously healthy triathlete, marathon runner, and skydiver, but died of pneumonia and a severe respiratory infection related to H1N1, according to a report in the *Sacramento Bee*. It was not clear whether she acquired the disease in the community or at the hospital, and the California Division of Occupational Safety and Health (Cal-OSHA) is investigating. The death certificate also noted methicillin-resistant *Staphylococcus aureus* infection as a contributing factor.

Meanwhile, as a harbinger of possible pain to come for U.S. hospitals, hospitals in Australia, Argentina, and other Southern Hemisphere countries reported staff shortages related to H1N1 as health care workers fell ill.

"There's a substantial surge in every place this is happening," says **Joshua Mott**, PhD, MA, EMT-P, coordinator of the international pandemic response for the Centers for Disease Control and Prevention's Influenza Division. "Because there are more cases overall, it is leaving facilities short-handed in places trying to figure out how to handle the surge."

Critical care physicians and ICU personnel have been among those infected with H1N1 in the Southern Hemisphere, Mott says.

Even some U.S. communities faced outbreaks during the summer months. In Salt Lake City, **Russell R. Miller III**, MD, MPH, of the Division of Pulmonary and Critical Care Medicine at the Intermountain Medical Center, reported that the emergency department was seeing about 250 patients a day, compared to a usual count of about 150. About 100-150

patients a day presented with influenza-like illness, he said, and the ICU treated 60 critical inpatients.

"It came on so fast that we were, like most places would be, unprepared," Miller told an Institute of Medicine (IOM) panel reviewing personal protective equipment needs for novel H1N1. **(See related article on p. 112.)** About 6% of the hospital's health care workers became infected, with an even higher percentage in the ICU, he said.

How to protect patients became a hot-button issue as the fall flu season approached. California nurses staged a protest, asserting that their hospitals were not providing N95 respirators, weren't tracking occupational exposures, and hadn't provided enough education on novel H1N1 vaccine.

With news that novel H1N1 vaccine production would be slower than anticipated, debate over the proper protective gear for health care workers took on a new sense of urgency. Infection control practitioners argued for droplet and contact precautions, similar to the protocol used with seasonal influenza: Surgical or procedure masks, gowns, and gloves. They were supported by the Healthcare Infection Control Practices Advisory Committee (HICPAC), an advisory panel to CDC, as well as infection control associations.

However, occupational health and industrial hygiene experts cited evidence of the airborne spread of influenza and the failure of surgical masks to provide protection. Surgical masks do not qualify as personal protective equipment and their filtration properties are not certified by any governmental agency.

"Decision makers with no particular expertise of aerodynamics, ventilation, aerosol physics, biosafety, and airborne spread of disease, nor about respiratory protection, and who are under great political pressure, are formulating scientifically unfounded policies and inconsistent and confusing regulations," says **Gabor Lantos**, MD, PEng, MBA, president of Occupational Health Management Services in Toronto.

Labor union advocates also pointed out that the Occupational Safety and Health Act requires employers to reduce workplace hazards — even if those same hazards exist in the community. "Employers have to take reasonable steps to protect workers from exposures," says **Bill Borwegen**, MPH, occupational safety and health director of the Service Employees International Union (SEIU). "The minimum level of protection from airborne hazards is a NIOSH [National Institute of Occupational Safety and Health]-certified respirator."

The IOM panel was scheduled to issue its findings by Sept. 1, and CDC director **Thomas Frieden** said he will make a decision on whether CDC will recommend masks or respirators by Oct. 1.

Meanwhile, hospitals wrestled with issues of symptom screening and antiviral prophylaxis. Variation in novel H1N1 symptoms may make it more difficult to screen health care workers. "We have a lot of people coming in with the flu who did not have fever," says **Bruce Cunha**, RN, MS,

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Editor: **Michele Marill**, (404) 636-6021, (marill@mindspring.com).
Associate Publisher: **Coles McKagen**, (404) 262-5420, (coles.mckagen@ahcmedia.com).
Managing Editor: **Gary Evans**, (706) 310-1727, (gary.evans@ahcmedia.com).
Director of Marketing: **Schandale Kornegay**.
Senior Production Editor: **Nancy McCreary**.

Editorial Questions

For questions or comments call **Michele Marill** at (404) 636-6021.

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COHN-S, manager of employee health and safety at the Marshfield (WI) Clinic. "One of the problems you have with this disease is it doesn't have clear-cut symptoms."

In fact, the CDC recommends that in communities with novel H1N1 or in units with patients being assessed for novel H1N1, health care workers should be monitored for "signs and symptoms of febrile respiratory illness."

Cunha suggests that health care workers be monitored for *all* symptoms of influenza, including sore throat, cough, headache, fatigue, and body aches. At the least, health care workers should be educated about novel H1N1 and the potential for afebrile illness, and they should be instructed to wear a mask at work if they have possible symptoms but no fever, he says.

As of August, the CDC recommended antiviral prophylaxis for health care personnel who had "a recognized, unprotected close contact exposure to a person with novel (H1N1) influenza virus infection (confirmed, probable, or suspected) during that person's infectious period."

However, Marshfield Clinic was considering the use of prophylaxis to minimize the impact of the community outbreak on its health care workers — to reduce absenteeism and staffing shortages in key areas during a time of patient surge, says Cunha. Marshfield Clinic has 7,000 employees and had stockpiled antiviral medications in preparation for a pandemic, he says.

Nurses cite lack of protection

In the summer outbreaks of novel H1N1, there were troubling reports of hospitals that were not doing enough to communicate with health care workers and provide them adequate protection.

"Health care workers who have died from this, in some cases at least, have not been offered appropriate antivirals immediately when they started to get sick," **Rosemary Sokas**, MD, director of occupational medicine for the U.S. Occupational Safety and Health Administration told the IOM panel investigating appropriate personal protective equipment. She did not elaborate on what situation she was referring to.

The California Nurses Association/National Nurses Organizing Committee in Oakland surveyed nurses at 75 hospitals in California, Illinois, Nevada, and Maine and found gaps in infection control, including failure to promptly notify nurses that they had an unprotected exposure to a patient with suspected or confirmed novel H1N1. One in 10 did not have access to N95 respirators, the survey found.

"There are places where policies aren't followed consistently. Doors are left open, nurses have masks on but unprotected visitors come in and out," says **Jan Rodolfo**, RN, communications specialist with the CAN/NNCC. "Lots of nurses are complaining about not having communication on the unit about swine flu."

Even with the nation's first aerosol transmissible disease standard, California did not avoid confusion over the use of respirators and masks. The California Department of Public Health makes a determination about what is a novel pathogen or an airborne disease. So far, California has continued to follow the CDC guidance recommending the use of respirators for health care workers with direct patient care of patients with novel H1N1. But not all health departments in the state have followed suit.

In Sacramento County, where the nurse died, the health department has recommended the use of surgical or procedure masks. "The CDC hasn't

Where are the H1N1 shots?

This summer, the Centers for Disease Control and Prevention optimistically estimated that it would have 120 million doses of novel H1N1 vaccine by mid-October. Soon after, that was revised to a projected initial delivery of 45 million to 52 million, with a gradual increase up to 195 million doses by the end of 2009.

In a process similar to the Vaccines for Children program, a central distributor will receive vaccine from the five manufacturers, and then it will be distributed through the states, said **Jay Butler**, MD, director CDC's H1N1 Vaccine Task Force. "Everyone is doing everything they can to get as much vaccine available as early as possible," he said at a press briefing.

Health care workers are among the priority groups for the vaccine, but as of late August, it wasn't clear how much of the initial supply would go to hospitals. The Advisory Committee on Immunization Practices recommended vaccination for up to 159 million people; but if supplies are short, the priority groups are: health care and emergency medical services personnel; pregnant women; people who live with or care for children younger than 6 months of age; children 6 months through 4 years of age, and children 5 through 18 years of age who have chronic medical conditions. ■

produced any evidence that this virus behaves any differently from seasonal virus in terms of infectivity," says **Glennah Trochet**, MD, Sacramento County's public health officer. "I couldn't justify the use of N95s that we may need later on [if or] when in fact the virus does change." ■

Surgical masks not effective, study shows

IOM panel hears range of research on masks

Surgical masks do not provide protection from aerosolized viral particles, respiratory protection experts told an Institute of Medicine (IOM) panel that was considering personal protective equipment and novel H1N1.

A randomized clinical trial comparing N95 filtering facepiece respirators and surgical masks, found that "the surgical masks had no efficacy against any of the [measured] outcomes," reported **C. Raina MacIntyre**, MBBS, M App Epid, PhD, FRACP, FAFHM, Head of the School of Public Health and Community Medicine at the University of New South Wales in Sydney, Australia. The respirators reduced clinical respiratory illness by 65%, influenza-like illness by 75%, and laboratory-confirmed influenza by 75%, she said.

The as-yet-unpublished study involved 1,935 health care workers at 24 hospitals who wore masks, respirators, or no facial protection for four weeks during the winter. Researchers then tracked the health care workers for five weeks to detect onset of respiratory illness. Overall, respirators were 42% more protective than masks, although no statistical difference was found between fit-tested and nonfit-tested masks.

This evidence of the lack of protectiveness of surgical masks gained attention at the meeting. Yet other presenters expressed concern about confusing guidance and lack of compliance by health care workers.

"[Employees] were telling me they were having difficulties carrying out their duties wearing the respirators throughout their shifts," said **Leonard Mermel**, MD, professor of medicine at Brown University and medical director for the Department of Epidemiology and Infection Control at Rhode Island Hospital. "I agreed to back down to [surgical masks due to] their requests."

The IOM panel was scheduled to issue a report by Sept. 1 to Thomas Frieden, director of the Centers for Disease Control and Prevention in Atlanta. Frieden is considering a CDC shift to droplet precautions — gowns, gloves, and surgical masks — for health care workers caring for novel H1N1.

"The guidance is effectively going to apply to all individuals presenting with upper respiratory infection," cautioned **Toby Merlin**, MD, deputy director of the Influenza Coordination Unit at CDC. "There is no means to [immediately] distinguish people who present with novel H1N1 infection from people who present with seasonal influenza from people who present with other upper respiratory infections. Those precautions need to be able to be used everywhere that health care workers are encountering individuals with upper respiratory infections."

The IOM heard a range of research and perspectives on personal protective equipment and influenza:

• Surgical masks vary from providing almost no protection to significant protection — but it's impossible to tell the difference between masks.

Roland BerryAnn, deputy director of NIOSH's National Personal Protective Technology Laboratory, reported that a test of five randomly selected masks showed that their filtration efficiency ranged from 12% to 98%. "The problem is you don't know which one is the 11 or 12 or which one is the 90-something," he said. The Food and Drug Administration provides marketing clearance for surgical masks but doesn't certify their performance, he noted. In the tests, N95 filtering facepiece respirators had a filtration effectiveness of 98%. Studies have found that face seal leakage of surgical masks ranges from 15% to 40%, while N95s have a face seal leakage of just 3% to 5%, reported **Lisa Brosseau**, ScD, CIH, of the University of Minnesota.

• Even the exhalation from breathing releases viral aerosols.

Using a special device that collects respirated air from breathing or coughing, researchers at Harvard University found viral RNA in exhaled air of 14% of 28 subjects with influenza. (The RNA also was detected in the coughs of 68% of the subjects.) Influenza A was more likely to be found in the exhaled air or coughs than influenza B. "The majority of particles we were able to measure were less than 5 µm [in size]," says **James McDevitt**, PhD, CIH, instructor at the Harvard School of Public Health. When a study participant wore a surgical mask, there was a significantly

smaller release of influenza RNA particles that were 5 µm and larger, he said. The analysis of smaller particles is ongoing.

• Aerosolized particles exist in patient rooms, but it's not clear if they're infective.

Researchers from the National Institute for Occupational Safety and Health and West Virginia University used 24 stationary aerosol samplers to test the air for an 11-day period in an urgent care clinic in Morgantown, WV. Heath care workers also wore two other personal samplers. Eighty-one percent of the exam and procedure rooms containing a confirmed influenza patient tested positive for airborne influenza A. About half of the particles (47%) were 5µm or smaller.[1] Health care worker exposures were similar to those found in the room air, said **William G. Lindsley**, PhD, a biomedical engineer in NIOSH's Health Effects Lab. "It's pretty clear that the health care workers themselves were being exposed to the RNA levels that we were detecting," he said. The study did not address the infectivity of the particles.

• Health care workers may resist wearing respirators.

In a study of tolerability, 27 health care workers wore eight different respirator or surgical mask ensembles for an entire eight-hour shift, with two 15-minute breaks and one 30-minute lunch break. In more than half the sessions (59%), health care workers stopped wearing the masks or respirators because they could not tolerate them. Their complaints included diminished speech communication, heat, pressure, and dizziness. The powered air-purifying respirator (PAPR) and N95s with an exhalation valve were the best tolerated; the N95 worn with a surgical mask over it was the least tolerated.[2] "You can have an extremely effective respirator, but if it's not worn it's not effective. Tolerability is as important as effectiveness," said **Lewis J. Radonovich**, MD, director, Biosecurity Programs, for the Office of Program Development at the North Florida/South Georgia Veterans Health System in Gainesville, FL. "What we have to fix is comfort." Radonovich is the principal investigator of Project BREATHE, a collaboration of NIOSH and the Veterans Health Administration to spur development of a better respirator for health care.

• Eye exposure alone did not lead to infection.

In a study of transmissibility, 10 participants were exposed to rhinovirus 39 while breathing clean air. None became sick, indicating that transocular transmission did not occur — and that eye protection is not necessary to prevent infection, reported **Werner Bischoff**, MD, PhD, assistant professor of infectious diseases at Wake Forest University School of Medicine in Winston Salem, NC. However, two of five participants wearing surgical masks who were exposed to the rhinovirus in the air developed cold symptoms four to seven days later, and one of four participants wearing a fit-tested N95 developed cold symptoms five to 10 days after exposure.

• Hospitals should also use other methods of hazard reduction, including isolation or cohorting and ventilation.

Several presenters emphasized that personal protective equipment is just one part of a "hierarchy of controls," and that hospitals must also focus on engineering and administrative controls. That includes placing a mask on patients with respiratory illness, cohorting patients suspected of having novel H1N1, and use of isolation rooms with proper ventilation. Other simple measures could include placing a clear plastic barrier in the registration area to protect clerks from infectious patients, said **Katherine Cox**, MPH, Med, director of occupational health and safety for the American Federation of State, County, and Municipal Employees. Hospitals can minimize the number of employees who have potential exposure to patients with influenza-like illness and can conduct risk assessments to target respiratory protection to those health care workers at risk, she says. "You could end up having only 10% to 30% of your workers wearing respiratory protection," she says.

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NY requires HCWs to get flu shots

Only medical exemptions allowed

Health care workers in New York hospitals are all rolling up their sleeves this fall for the flu vaccine. It's no longer a choice. It's a mandate.

New York is the first state in the country to mandate flu vaccination without allowing health care workers to "opt out" with a declination statement.

The State Hospital Research and Planning Council issued an emergency regulation that requires health care workers to receive seasonal flu vaccinations unless they have a medical contraindication.

The rule covers all personnel at health care facilities, including hospitals, outpatient clinics, and home health agencies. (Nursing homes are not covered because of separate legislation that addresses flu vaccines at long-term care facilities.)

Casting a wide net

Everyone with direct contact with patients, or who could potentially expose patients, must receive the vaccine, including medical staff, contractors, students, and volunteers. Employees who work off site or who have "no more than infrequent and/or incidental direct contact with others who might have direct contact with patients," such as those who work in the records department, do not need to be vaccinated.

The council cited studies of hospital-based outbreaks of influenza, the dismal record of voluntary influenza immunization among health care workers, and the pending strain of novel H1N1 on the health care work force. "The sooner that the emergency regulations are in place, the sooner lives will be saved and other complications of influenza disease avoided," the council said in its explanation of the emergency rule.

The mandate for flu vaccination drew a strong response — both praise and criticism. "Kudos to the state of New York for taking a leadership position in protecting patient safety," says **Greg Poland**, MD, director of the Mayo Vaccine Research Group at the Mayo Clinic in Rochester, MN, and an outspoken advocate for flu vaccination of health care workers.

He predicted that other states and health care institutions will move forward with similar mandates. "In a few years, new health care workers will say, 'Haven't we always done this?'"

However, the New York State Nurses Association in Latham, NY, began to receive calls and emails from nurses who said they would cross the state line into Connecticut or New Jersey to avoid the mandate. The NYSNA supports voluntary flu vaccination, says spokeswoman **Nancy Webber**, but opposed the mandate. She notes that annual flu vaccines vary in their effectiveness and that infection control precautions will still be the primary way to protect patients and health care workers.

The regulation requires health care employers to administer and document the vaccination of eligible health care personnel by Nov. 30. The council embarked on a rule-making process to create a permanent influenza vaccination rule. It is likely the emergency rule also will be extended to the novel H1N1 vaccine, when it becomes widely available, says **Beth Goldberg**, public affairs program manager for the New York State Department of Health.

"When it comes to each individual facility, we are going to look closely at how this is implemented," says Webber. "If we feel this is violating our contract agreements, we'll bring this up with employers. There are protections for workers that we're going to be diligent about enforcing."

Meanwhile, as soon as the regulation went into force in mid-August, hospitals began figuring out how to proceed. In some ways, vaccination will be simpler; employee health professionals aren't debating the merits of the vaccine, they're just fulfilling a state mandate. But the logistics of vaccinating not just staff but contractors, students, and volunteers will be daunting.

Winthrop University Hospital in Minneola, NY, began by determining which of the hospital's 6,000 employees fall under the mandate and creating a new database to document the vaccinations. "We are meeting in a committee to decide how to approach this as an organization. We work as a team and we'll get it done," says **Carol Cohan**, RN, MHA, COHN-S/CM, associate director of employee health and Northeast Regional Director of the Association of Occupational Health Professionals in Health Care.

The hospital plans to provide education to employees, some of whom have never had the flu shot before. And they will still promote the flu vaccine campaign with a catchy slogan and raffled-off prizes, she says. "It doesn't have to be all business. We have fun working together to promote a safer environment for patients and employees," Cohan says. ■

ACOEM: Wellness at work belongs in HC reform

Occ-med docs push for 'integrated' focus

All the shouting (Death panels! Rationing!) has gotten the press attention in health care reform. But in the behind-the-scenes effort to create a new paradigm, occupational health physicians have promoted prevention, workplace-based wellness, and the link between workplace

health and productivity.

Occupational health physicians from the American College of Occupational and Environmental Medicine (ACOEM) met with members of Congress and presented their action plan:

They would like a requirement for employer-provided health plans to include an "integrated health and productivity enhancement program for work-site prevention, health promotion, and health protection" which would be overseen by an occupational medicine physician. They want employer-based health plans to be required to reimburse for preventive services provided to employees. And they want tax credits for employers that offer "comprehensive and effective wellness programs."

"We have really made it our mission this year to talk about work-centered health care reform," says ACOEM president **Pamela A. Hymel**, MD, MPH, FACOEM, corporate medical director of Cisco Systems in San Jose, CA. "We do believe the workplace is the cornerstone for improving health in so many areas."

ACOEM supported the Healthy Workforce Act, which would provide tax credits for employer-based wellness programs. While many large employers have developed employee wellness and health promotion programs, many others still have not made the investment in their workers' health, says Hymel.

"We are going to remain active every step of the way [in the health care reform debate]," she says. "We not only want to improve the health of the person in the workplace, but improve the health of the work force."

Invest in health of 'human capital'

The bottom line: Money spent on wellness is an investment in your human capital, says **Ronald Kessler**, PhD, professor of health care policy and a participant in ACOEM's National Workforce Health and Productivity Summit in November 2008. "It's very difficult to think of anything that will improve the efficiency of workers more than improving their health," he says.

There's the obvious savings in reducing the number of workers who are out sick and need to be replaced by temporary workers. But workers are also much more alert and productive when they're healthy. And they are less likely to suffer from a workplace injury, says Kessler, who developed the Health and Work Performance Questionnaire.

That is why employers are willing to pay incentives to employees to participate in health risk appraisals, smoking cessation, and other health promotion programs. A 2008 survey by the Integrated Benefits Institute in San Francisco found that about three-quarters of employers offer incentives for employees to participate in health and productivity initiatives. For one in five employers, those incentives were valued at $400 or more per employee.

Occupational health is more than injury response or even injury prevention; it should encompass efforts to improve the overall health of the work force, the ACOEM summit concluded. "Continuing the status quo of current health care strategies in the workplace is not a sustainable option; the realities of the economic burden of health risks and health conditions, rising total costs and an increasingly competitive global marketplace require an urgent shift to integrated health and productivity improvement strategies," the summit participants concluded.

Hospital reshapes workplace health

Employers can shape employees' health patterns, most obviously by deciding whether or not the health benefits will include preventive care, notes **Robert McLellan**, medical director of the Live Well, Work Well program at Dartmouth Hitchcock Medical Center in Lebanon, NH, and associate professor of medicine and community and family medicine at the Dartmouth Medical School in Hanover.

They also shape the workplace by determining shifts and schedules, easy access to stairwells and walking paths, and even what is served in the cafeteria, notes McLellan, who is past president of ACOEM and a participant in the summit.

But other factors influence employee engagement with health promotion and their participation in health risk appraisals, he says. In a recent study, McLellan and his colleagues found that participation in voluntary health risk appraisals varied widely by job type (from 17% to 56%). Job satisfaction also influenced employees' level of participation.[1]

"[Employers'] fundamental responsibility is to provide a safe and healthy work environment. That's law," he says. "It is well recognized that when employers do not live up to that obligation, their employees are not going to be receptive to employer-sponsored health promotions."

An employee's perception of supervisors also affects their health decisions, McLellan says. "The

way midlevel management treats their employees has an impact on their personal health behaviors," he says.

Dartmouth Hitchcock designed the Live Well, Work Well program to leverage the workplace attributes to improve employees' health. It encompasses everything from healthier choices in the cafeteria to policies and changes in the physical environment that will reduce hazards and promote healthier activity. The medical center encourages employees to take confidential, online health risk appraisals and provides health coaches. Care managers assist employees with chronic conditions such as diabetes.

The goal: To create a culture of health, safety and well-being, says McLellan. "We have the ability to reform health care right here at Dartmouth Hitchcock Medical Center," he says. "We want to deploy a suite of programs and services and interventions to optimize people's well-being and reduce their health risks, disease and associated costs."

Dartmouth Hitchcock may then be able to prove a point — that the nation's workplaces can be at the center of improving the nation's health.

(Editor's note: More information about ACOEM's Healthy Workforce Now initiative is available at www.acoem.org/healthyworkforcenow.aspx.)

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Making the OR a (back) pain-free zone

AORN offers ergonomic toolkit to nurses

The operating room poses unique challenges for patient handling. Anesthetized patients can't move, respond, or even complain of discomfort. The sterile field and crowded conditions limit the extra equipment that can be brought in. Meanwhile, nurses or techs must sometimes stand for hours, holding equipment or a patient's limb.

To help OR nurses avoid injury, the Association of peri-Operative Registered Nurses (AORN) is launching an awareness campaign and created an educational toolkit. Algorithms help nurses determine which equipment would be appropriate for safe patient handling. **(See chart, p. 117.)**

"All the algorithms were based on research. It's truly evidence-based guidance," says **Carol Petersen**, RN, BSN, MAOM, CNOR, manager of perioperative informatics at AORN's Center for Nursing Practice, who worked with ergonomics experts such as Tom Waters of the National Institute for Occupational Safety and Health (NIOSH) and Audrey Nelson with the Patient Safety Center of the VISN 8 of the Veterans Health Administration. "One of the things everyone struggled with was how to maintain sterility and still maintain the safety of the perioperative personnel."

Patients larger, workers older

Risks in the operating room are rising as hospitals care for more patients of size and the nursing work force ages, notes **Mary Ogg**, RN, MSN, CNOR, perioperative nursing specialist. Some hospitals have responded by providing special equipment for their operating rooms, she says.

But nurses also need to be their own advocate, and they should be aware of proper lifting techniques and assistive devices, she says. "I would like for nurses to be aware of these algorithms to protect themselves and to keep their patients safe," she says.

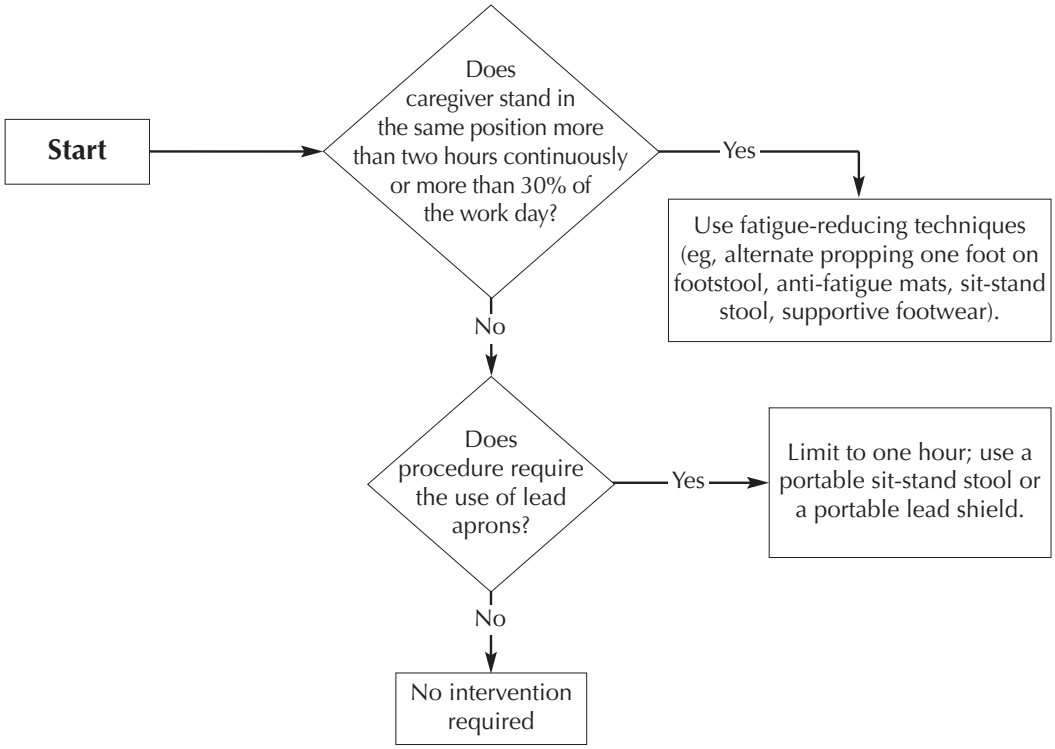
In 2006, AORN issued a position statement calling for "ergonomically healthy" workplaces. They called on hospitals to identify ergonomic risks in the OR and implement injury prevention strategies. According to AORN, some of the OR-specific ergonomic risks include:

- **Static posture:** Standing in one place for long periods or standing on hard surfaces such as concrete can cause muscle fatigue, pain, and poor circulation to the lower extremities. Possible interventions include special mats and footwear and support stockings. Employees also can shift their weight from side to side to give their legs some relief, says Petersen.
- **Awkward postures:** Nurses and other OR personnel can develop neck or shoulder discomfort from maintaining an awkward posture, such as when holding a retractor or a patient's limb. In some cases, OR equipment may be repositioned to create a better ergonomic setting. Lift equipment also can be used to elevate a patient's limb, freeing the employee to assist in other ways.
- **Transfer from transport gurney to OR table:** Even when two or more employees are working together to transfer a patient laterally, the force

(Continued on page 118)

Ergonomic Tool #4

PROLONGED STANDING



General recommendations

- Caregiver should wear supportive footwear that has the following properties:
  - does not change the shape of the foot;
  - has enough space to move toes;
  - shock-absorbing, cushioned insoles;
  - closed toe; and
  - height of heel in proportion to the shoe.
- Caregivers may benefit from wearing support stockings/socks.
- Anti-fatigue mats should be on the floors.
- Anti-fatigue mats should be placed on standing stools.
- The sit-stand chair should be set to the correct height before setting the sterile field so caregivers will not be changing levels during the procedure.*
- Be aware of infection control issues for nondisposable and anti-fatigue matting.
- Accommodations for pregnancy were considered, but the two-hour limit on prolonged standing covers this condition.
- Scrubbed staff should not work with the neck flexed more than 30 degrees or rotated for more than one minute uninterrupted.
- Two-piece, lightweight lead aprons are recommended.
- During the sit-to-stand break, staff should look straight ahead for a short while.

* "Recommended practices for maintaining a sterile field," in *Standards, Recommended Practices, and Guidelines* (Denver, Colo: AORN, Inc, 2007) 665-672.

sustained by each person often exceeds the NIOSH lifting limits. For patient handling, NIOSH recommends that individuals lift no more than 35 pounds. Transfer devices, such as the Hover Matt, can be used successfully in the OR.

• **Cumulative trauma:** As with other health care workers, OR nurses and techs may develop back, shoulder or neck injuries over time as a result of ongoing stress. That is why AORN recommends a comprehensive program that identifies hazards before significant injury occurs, says Ogg. Ceiling lifts may provide a viable solution for some ORs, particularly if the lift can be positioned so it doesn't interfere with other equipment needed for the procedure. The ceiling lifts also must meet standards for maintaining the sterile field, Petersen notes.

[Editor's note: The Association of periOperative Registered Nurses (AORN) is the national association committed to improving patient safety in the surgical setting. AORN is the premier resource for perioperative nurses, advancing the profession and the professional with valuable guidance as well as networking and resource-sharing opportunities. AORN promotes safe patient care and is recognized as an authority for safe operating room practices and a definitive source for information and guiding principles that support day-to-day perioperative nursing practice.] ■

OSHA issues guide on ethylene oxide

A new guide from the U.S. Occupational Safety and Health Administration answers a myriad of questions about monitoring workspaces where ethylene oxide (EtO) is used. For example, OSHA explains that you may not need to monitor each individual employee. "But you do need to determine the exposure level of every employee. If you have only one employee, or just a few *who all do different jobs*, you need to collect personal samples for each employee. If you have two or more employees *who do the same job*, however, you may be able to collect personal samples for one of these employees and use the results to document exposure levels for all of these employees. This is known as representative sampling."

When should you monitor? You must collect a 15-minute air sample during the portion of the work shift when you have reason to believe that the employee's EtO exposure will be the highest.

CNE *questions*

13. According to Bruce Cunha, RN, MS, COHN-S, screening of health care workers for novel H1N1 symptoms may be difficult because:
A. employees do not report their symptoms.
B. symptoms could be confused with seasonal flu.
C. CDC does not recommend symptom screening.
D. some people with novel H1N1 do not have a fever, a common screening symptom.

14. In a study comparing respirators and surgical masks, C. Raina MacIntyre, MBBS, M App Epid, PhD, FRACP, FAFHM, found that:
A. only fit-tested respirators were effective.
B. both respirators and surgical masks were effective.
C. surgical masks were not effective.
D. Neither surgical masks nor respirators were effective.

15. Who is required to receive a flu vaccine, according to the emergency rule of the New York State Hospital Research and Planning Council?
A. Health care personnel who have direct patient contact or the potential to expose patients.
B. Health care personnel with direct patient contact only.
C. All hospital employees.
D. Health care facilities will designate at-risk employees.

16. As a part of health care reform, the American College of Occupational and Environmental Medicine (ACOEM) would like to see:
A. a requirement that all employers establish a health and safety program.
B. a new standard for respiratory protection.
C. a minimum ratio of employee health professionals to employees.
D. tax credits for employers who provide comprehensive and effective wellness programs.

Answer Key: 13. D; 14. C; 15. A; 16. D.

CNE instructions

Nurses participate in this continuing nursing 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 with the **December** issue, you must complete the evaluation form provided in that issue and return it in the reply envelope provided to receive a credit letter. ■

You may need to collect several 15-minute samples during the same shift.

The publication is available at www.osha.gov/Publications/ethylene-oxide.pdf. ■

OSHA: No abbreviated Bitrex fit-test

The U.S. Occupational Safety and Health Administration has decided against a streamlined Bitrex protocol that would have made fit-testing faster. "After thoroughly reviewing the comments and other information available in the record for the proposed rulemaking, OSHA decided that the abbreviated Bitrex qualitative fit test is not sufficiently accurate to include among the qualitative fit tests listed in . . . its Respiratory Protection Standard," OSHA stated in a *Federal Register* notice [74 *Fed Reg* 30,250-30,256 (June 25, 2009)].

OSHA noted a number of concerns about the protocol from the National Institute for Occupational Safety and Health, including whether the test sensitivity was too low. ■

Wellness incentives fine; no penalties for opt-outs

Hospitals slow to catch on to national trend

Hospitals are boosting incentives for wellness programs, with the hopes that healthier employees will have lower medical claims and better productivity. That push for greater incentives is likely to continue despite a recent advisory notice cautioning employers not to penalize employees who choose not to participate.

The Equal Employment Opportunity Commission (EEOC) issued a letter — informal guidance but not a formal ruling — that advises employers that participation in a health risk assessment must be truly voluntary. A health risk assessment is usually the first step toward enrollment in a wellness program.

Incentives are permitted in voluntary wellness programs, and "a wellness program is voluntary if employees are neither required to participate nor penalized for nonparticipation," says **Joyce Walker-Jones**, senior attorney adviser in the EEOC's ADA division in Washington, DC.

Clearly, it's acceptable to provide token gifts or rewards to employees who take the health risk assessment. But some employers have provided substantial cash bonuses or discounts on health insurance premiums for active participation in wellness programs.

"At what point is an incentive so great that it's a penalty to those who don't participate? We know that in order to get people interested the incentive has to be something more than a T-shirt or mug," says Walker-Jones. The EEOC will continue to consider the question of incentives, she says.

Meanwhile, some guidance comes from the Health Insurance Portability and Accountability Act (HIPAA), which states that financial inducements can't exceed 20% of the cost of the employees' health insurance. "[T]he percentage limit is designed to avoid a reward or penalty being so large as to have the effect of denying coverage or creating too heavy a financial penalty on individuals who do not satisfy an initial wellness program standard that is related to a health factor," HIPAA states.

While many employers are taking an increasingly aggressive approach to encouraging wellness, hospitals are just beginning to recognize the merits of wellness programs and incentives, says **Michael Wood**, MS, MPH, senior consultant specializing in health and productivity with the Watson Wyatt consulting firm in Seattle.

"The hospitals have not taken a strategic systematic approach to improving the health of their work force, which is problematic not only because of health care costs but also from a work force management approach," he says.

Reducing absenteeism among nurses, for example, could significantly reduce a hospital's per diem costs for their temporary replacement, he says.

COMING IN FUTURE MONTHS

- Obesity and its impact in the HC workplace
- Are HCWs vectors of flu?
- Safe patient handling legislation gains ground
- Update on respirator supply
- Evaluating sharps: Can testing determine which are best?

The link between health status and productivity is driving a trend toward greater wellness incentives, says Wood. Some employers simply offer $50 or $100 bonuses to employees who complete a health risk assessment.

"Some of the most radical incentive plans on the horizon are ones that tie actual health status and participation [in wellness programs] to compensation," he says. For example, employees may receive additional contributions to their 401K plans or cash bonuses if their blood pressure or cholesterol is in the normal range. ■

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. ■