



# Hospital Employee Health®

THE PRACTICAL GUIDE TO KEEPING HEALTH CARE WORKERS HEALTHY

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## Labs urged to boost worker safety measures

*CDC: Incident tracking option on the way*

For weeks, 25-year-old **Richard Din** worked long hours in the lab, hoping for a research breakthrough. At the VA Medical Center in San Francisco, he was a research laboratory associate on a project to develop a vaccine against *Neisseria meningitidis* serogroup B. But instead of saving lives, Din became a victim of the deadly organism.

Soon after he came home from work one day last spring, he complained of headache, fever and chills. He developed a rash and lost consciousness in the car on the way to the hospital. He died about 17 hours after his first symptoms appeared.<sup>1</sup>

This meningitis case highlights the serious risks that face lab workers in both clinical and research labs. In a 2005 report, researchers from the Centers for Disease Control and Prevention in Atlanta identified six cases of laboratory-acquired meningitis, with a fatality rate significantly higher than for community-acquired cases.<sup>2</sup> Other deadly organisms also transmitted to workers in a lab include plague (*Yersinia pestis*) and Brucella.<sup>3,4</sup>

No one knows the actual number of laboratory-acquired infections — or lab exposures — because there is no national reporting system. A Biosafety Blue Ribbon Panel of experts representing all laboratory disciplines advised CDC to create a surveillance system and to promote a “culture of safety” in the nation’s diagnostic labs.<sup>5</sup> In response to their concerns, the CDC and National Institutes of Health are working on an online, voluntary, non-punitive reporting system which may be available later next year.

“Working in the microbiology laboratory is inherently risky because we work with live, virulent infectious agents. We do that every day, 24 hours a day, and we do everything we can to protect our patients, ourselves, our coworkers and our families from [being exposed],” says **Michael Miller**, PhD, D(ABMM), former associate director for laboratory science at the CDC’s National Center for Emerging and Zoonotic Infectious Diseases and now a private clinical microbiology laboratory consultant based in Dunwoody, GA.

Miller led a writing team of experts to produce the new “Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories.” The

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document provides detailed information on analyzing hazards and reducing risk. “We think that these guidelines fill a gap that hasn’t been filled for quite some time,” he says.

## Lack of training raises risk

Infection with a deadly organism remains rare, but poor infection control and safety compliance can lead to outbreaks that affect even the children of laboratory workers. From August 20, 2010 and June 29, 2011, surveillance of foodborne disease picked up clusters that were related to a strain of *Sal-*

*monella Typhimurium* associated with clinical and training microbiology laboratories. In 38 states, 109 people were infected with the lab-linked strain X of *S. Typhimurium*.<sup>5</sup>

Further investigation pointed to some specific risk factors. Labs with Salmonella illness generally had less biosafety training. They also had problems ensuring compliance with some lab policies, such as the prohibition on using cell phones or other handheld devices in the lab, a survey found.

“Training is the first thing that gets cut [to save money],” says Terry Jo Gile, MT(ASCP), MA, Ed, a laboratory safety consultant based in North Fort Myers, FL, known as “the safety lady.” “If [laboratory managers] take the time to do the training they would save a lot of time in the long run, including visits to the employee health department.”

For example, lab workers become complacent about what they wear, she says. “We find that people are not wearing the right personal protective equipment,” she says. Clogs may be acceptable footwear in other parts of the hospital, but in the lab, the foot needs to be completely covered, she notes. Lab coats need to be made out of approved materials, and employees need to use appropriate personal protective equipment.

Under the new Hazard Communications Standard of the U.S. Occupational Safety and Health Administration, lab employees need to be trained to recognize the safety pictograms and to become familiar with the new material data sheets.

In working with biological samples, employees need to fully understand the importance of safety precautions, says Christina Dillard, assistant director of the Laboratory Safety Institute in Natick, MA, which provides training and audits of lab safety programs.

“I go into too many labs [where employees] do not know the difference between a biosafety cabinet and a standard laminar flow hood,” she says, noting that the laminar flow hoods can blow contaminated air onto the employee.

Meanwhile, specimens containing infectious agents don’t have a skull and cross bones on the label to remind employees that they are potentially deadly. “A sample of meningitis didn’t come in a labeled container that said, ‘This is how it could hurt you.’ It’s a training issue,” Dillard says.

## Tracking system a year away

Although there is no surveillance data, laboratory exposures appear to be commonplace. In a 2002-2004 online survey of clinical laboratory directors, a third reported a lab-acquired infection. Shigella,

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**AHC Media**

which causes fever, diarrhea and stomach cramps, was the most frequent. Lab workers also are vulnerable to bloodborne pathogen exposures. Lab workers comprised one-fourth of the 32 health care workers identified as having acquired HIV in an occupational transmission between 1981 and 1992.<sup>5</sup>

CDC recognizes the lack of data, including research related to laboratory incidents and lab-associated infections.

“Any laboratory director you talk to can give you anecdotal stories, which can be very powerful. But what we really need is standardized collected data,” says **Nancy E. Cornish, MD**, medical officer with CDC’s Division of Laboratory Science and Standards.

The questionnaire will seek exposure incidents as well as near-misses, says **Paul Meechan, PhD, MPH, CBSP**, director of the CDC Office of Safety, Health and Environment. They will collect information on the type of injury, any resulting disease process and treatment, last biosafety training, and the lab actions taking place when the incident occurred.

“We’re trying to find the key questions to ask that [will best] modify behavior or engineering to reduce exposures and incidents,” says Meechan. “We’re very

careful about the types of data we collect so we don’t end up with anything that will identify an institution or an area specifically.”

Lab safety experts look forward to data that will help focus efforts to protect employees. “We definitely need a better surveillance system,” says Dillard. “Without having a better system of capturing what can go wrong in the labs, we can’t prevent it.”

## Document your risk analysis

By tracking incidents (including near-misses) at your facility, you can target your riskiest practices. Risk assessment is the centerpiece of a safety program, according to the guidelines for safe work practices.

It’s vital not only to identify the hazardous materials, but to recognize the activities that could lead to exposure, the guidelines state. The safety program should prioritize them based on the likelihood and consequences of an exposure and establish controls to minimize risk.

“Every laboratory should have a risk analysis done and documented,” says Miller. “If it’s done appropriately, the risk analysis will recognize where those

## What led to lab death remains a mystery

### *Culture of safety can prevent exposures*

More than 100 names appear on a virtual “memorial wall” on the website of the Laboratory Safety Institute, including high school and college students killed in explosions or electrocutions, researchers who died of plague and ebola, and even Marie Curie, who famously died after long-term exposure to radiation.

**Richard Din** is at the top of the list, the most recent addition. After his death from *Neisseria meningitides*, which he had been working with in the lab, the San Francisco VA Medical Center sought to detect the cause of his exposure and improve the lab’s safety practices.

They never figured out how he became infected.

“There’s no evidence that he did anything outside of laboratory routine practice,” says **Harry Lampiris, MD**, chief of infectious disease at the San Francisco VA Medical Center. “At the end of the day, it’s a mystery.

“He had only been working in the lab for about six months,” Lampiris adds. “We tried hard to get to the question of whether he did something

to increase his risk. He didn’t disclose anything to friends, coworkers didn’t observe anything.”

However, the San Francisco VA Medical Center undertook a review of “all the potential microbiologically transmissible agents that we work with in all our research laboratories,” he says.

The hospital also beefed up its lab safety and training. Lab workers should be aware of the signs and symptoms of early infection with an organism such as *N. meningitides* and should seek antibiotic prophylaxis if there’s an exposure, he says.

Clinical laboratories operate under the standard of “universal precautions. Any specimen could be high risk,” Lampiris says.

Reporting of exposures, incidents such as spills, and near-misses is important to maintaining a culture of safety, he says. “Laboratory safety is everyone’s responsibility. If there’s any kind of breach, lab employees feel they can report it to the [principle investigator] with no risk of recrimination,” Lampiris says. ■

## Laboratory job safety analysis

The Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories provide detailed information on potentially hazardous activities in the lab and suggest ways to protect employees from harm. Here is an excerpt on conducting a job safety analysis (See table, p. 125.):

“One way to initiate a risk assessment is to conduct a job safety analysis for procedures, tasks, or activities performed at each workstation or specific laboratory by listing the steps involved in a specific protocol and the hazards associated with them and then determining the necessary controls, on the basis of organism suspected. Precautions beyond the standard and special practices for Biosafety Level-2 may be indicated in the following circumstances:

- Test requests for suspected *Mycobacterium tuberculosis* or other mycobacteria, filamentous fungi, bioterrorism agents, and viral hemorrhagic fevers
- Suspected high-risk organism (such as *Neisseria meningitides*)
- Work with animals
- Work with large volumes or highly concentrated cultures
- Compromised immune status of staff
- Training of new or inexperienced staff
- Technologist preference. ■

risks are within the laboratory, whether it’s an aerosol or a simple risk of tripping over a rug.”

When new tests are introduced to the lab, they must be accompanied by a risk analysis, he says. (See box, this page.) And sometimes risks change in the midst of a work process. “When we receive spinal fluid for analysis and the gram stain suggests this could contain *Neisseria meningitides*, that [sample] should be moved into a biosafety cabinet,” he says.

Safety rules are often common sense, but training gives them context and emphasis. “One of the key rules of prevention in terms of laboratory acquired infection is still handwashing,” says Miller. “Wash your hands over and over again. Don’t just use the hand gels. In fact, the gels don’t work for some things. Hand-washing should be foremost in the protection in lowering risk.”

## Foster a culture of safety

The safety culture of a lab can be a life or death matter. In a 2009 case, a University of Chicago researcher became infected with an attenuated strain of *Y. pestis* and died about a week after he developed fever, body aches and a cough. A review found that the researcher — and other laboratory staff — had failed to attend required biosafety courses. The researcher also didn’t consistently wear gloves while handling the *Y. pestis* cultures.<sup>3</sup>

The new guidelines on safe work practices state that they were drafted, in part, to “encourage laboratorians to create and foster a culture of safety in their laboratories.”

That is a never-ending quest, says **Dan Scungio**, MT (ASCP), SLS, CQA (ASQ), laboratory safety officer at Sentara Healthcare in Norfolk, VA.

Scungio observes the practices in the labs to assess the culture. “You can always tell when people don’t feel comfortable with [protective equipment],” he says. “You could tell people were scrambling to put on gloves but they didn’t know where they were. If you spend enough time hanging around you’re going to see the level of the culture.”

He also drafts short surveys to ask employees what they feel about the level of safety in the lab.

“To change the safety culture, one of the first steps is to find your champions. Find the people who are most interested in it and let them be safety coaches and start working with them individually or as a team,” he says.

He meets monthly with about 30 safety coaches and asks them to provide safety education to their co-workers. With their help, he also tracks injuries and exposures.

“A couple of years ago we were seeing a large number of injuries in the histology area with people getting cut with cryostat or microtome blades,” he says.

He was able to purchase magnetic implements that allowed lab workers to pull the blades out with the magnet rather than by hand. He also purchased special forceps that could be used to handle the blade. The injuries dropped dramatically.

But much of lab safety involves a day-to-day awareness of safe practices.

“People who are interested in changing culture never give up,” he says. “A good safety coach never goes away. Even if you have to say the same thing every day, you are making a difference.”

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**TABLE 3. Example of job safety analysis for laboratorians working in diagnostic laboratories: hazards and controls**

Task or activity	Hazards and recommended controls			
	Potential hazard	Engineering controls	Administrative/work practices	PPE
Subculturing blood culture bottle	Needle stick—percutaneous inoculation	Safer sharps; retractable needles; puncture-resistant sharps container	No recapping; immediate disposal into sharps container	Gloves; gown or lab coat
	Aerosols—inhalation	BSC or splash shield	Work inside BSC or behind splash shield	Face protection if not in BSC; gloves; gown or lab coat with knit cuffs
	Splash—direct contact with mucous membranes	BSC or splash shield	Work inside BSC or behind splash shield	Face protection if not in BSC; gloves; gown or lab coat
Centrifugation	Aerosols—inhalation	BSC; removable rotors; safety cups; O-rings on buckets; plastic tubes; splash shield	Spin in BSC, or load and unload rotor in BSC; check O-rings and tubes for wear; no glass tubes; wait for centrifuge to stop before opening	Face protection if not in BSC; gloves; gown or lab coat with knit cuffs
Performing Gram stain	Aerosols from flaming slides	Slide warmer	Air dry or use slide warmer	Lab coat; gloves (optional)
Preparing AFB smear only	Aerosols from sputum or slide prep	Work in BSC; sputum decontaminant; slide warmer	Use slide warmer in BSC; dispose of slide in tuberculocidal disinfectant	Lab coat; gloves
Catalase testing	Aerosols—mucous membrane exposure	BSC; disposable tube	Work in BSC or perform in disposable tube	Lab coat; gloves; eye protection
AFB culture work-up	Aerosols—inhalation	BSL-3 laboratory optimal; BSL-2 laboratory with BSC minimal	All work in BSC using BSL-3 practices*	Solid-front gown with cuffed sleeves; gloves; respirator if warranted

**Abbreviations:** PPE= personal protective equipment; BSC = biological safety cabinet; AFB = acid-fast bacillus; BSL = biosafety level.

\* BSL-3 Practices include BSL-2 practice plus: restricted access; all work performed in a BSC (additional PPE); and decontamination of all waste before disposal.

**SOURCE:** Centers for Disease Control and Prevention.

tion. *Science Insider* May 4, 2012. Available at <http://news.sciencemag.org/scienceinsider/2012/05/death-of-california-researcher.html>. Accessed on Sept. 6, 2012.

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## NIOSH: No lab tests in chemo monitoring

*Use annual questionnaires to detect effects*

Hospitals should provide medical monitoring of employees who work with hazardous drugs, but

they don't need to conduct periodic blood tests or urinalysis, according to new recommendations from the National Institute for Occupational Safety and Health (NIOSH).

At press time, NIOSH was preparing to release updated recommendations on medical surveillance of employees handling chemotherapeutic agents. They take into account new technology, a large body of recent research, and an expanded range of hazardous drugs. Currently, NIOSH lists about 150 hazardous drugs.

“I don't know of any industry where there's anything close to this number of potentially hazardous [chemicals],” says Thomas H. Connor, PhD, research biologist with NIOSH's Division of Applied Research and Technology and an expert on hazardous drugs and occupational safety.

Medical surveillance of those handling hazardous drugs has been a particularly difficult issue because it's not clear what biologic changes to look for. “No one is able to come up with a universal marker. Because there are so many drugs, there is never going to be a

universal marker,” says Connor.

However, medical surveillance remains important for all employees who handle chemotherapy agents and other hazardous drugs, he says. Employees should complete an annual questionnaire that asks about possible acute symptoms, such as rash and headache, as well as adverse effects such as reproductive problems, he says.

As chemotherapy agents gain wider use beyond health care, it’s important to conduct a thorough hazard assessment, Connor says. You also should consider the range of employees with the potential for exposure, from the person who unpacks vials (which could be contaminated on the outside) to housekeeping workers who clean the patient’s room, he says. Many hazardous drugs also may be used outside of oncology units and those employees also need training and monitoring, Connor says.

### **Cleaning didn’t remove residue**

Residue from chemotherapy agents can linger in unexpected places — the outside of vials, surfaces in a patient’s room, even trailed on the floor by someone’s shoes. A recent Health Hazard Evaluation at a Florida oncology clinic found chemotherapy residue at the checkout counter.

In fact, 80% of wipe samples were positive for chemotherapy residue in a 2010 evaluation, even more than the 69% positive that were found in a 2009 visit. A comparison of morning and evening wipe samples found that overnight cleaning reduced but did not eliminate the residue.<sup>1</sup>

“This speaks to the difficulty of controlling these drug exposures,” says NIOSH industrial hygienist **James Couch**, CIH, MS, REHS/RS.

Surface wipe sampling kits are now commercially available and can be used to monitor contamination. NIOSH is validating a process for obtaining, storing and analyzing the samples, says Couch.

In 2010, Couch was able to sample for cyclophosphamide, ifosfamide, and doxorubicin, common chemotherapy agents, in addition to the platinum-containing drugs that were detected in samples in 2009.

The highest level of cyclophosphamide was found under an IV pole, which may have indicated an unreported or undetected leak. It took a couple of days of cleaning for the level to drop to a level consistent with other minor surface contamination, an indication that “housekeeping procedures were not effectively removing this chemotherapy drug in one cleaning,” Couch said.

Employees should be aware that surfaces are likely to be contaminated in treatment areas, says Connor.

“I think you can go into any facility that handles these and find similar results,” he says. “Every facility has some level of contamination.”

### **No recommended levels**

Does exposure at low levels cause harm to employees? NIOSH has no recommended exposure limits and acknowledges that the health effects of the myriad of chemotherapy drugs are difficult to discern. Drugs are often used in combination. Acute symptoms, such as headache or rash, could have other, non-occupational causes. The drugs are associated with an increased risk of cancer and reproductive problems, but those effects may take years to develop.

“We know the effects from high doses in patients over short periods of time. We don’t know, for the most part, the long-term effects at low doses,” says Connor.

A 2010 study found an increased risk of chromosomal abnormality among nurses and pharmacists who handled chemotherapeutic drugs.<sup>2</sup> An analysis of data in the Nurses’ Health Study also found a significantly higher risk of spontaneous abortion in the first trimester among nurses who handled antineoplastic drugs.<sup>3</sup> (*See HEH, April 2012, p. 41.*)

NIOSH now recommends looking for health effects with annual questionnaires and following up with blood testing and urinalysis if there are any concerns, such as multiple spontaneous abortions.

The agency moved away from a recommendation for routine blood and urine testing because slightly elevated results often occur as part of the normal variability, making it difficult to interpret the results as related to possible work exposures, Connor says.

### **Team assesses employee risk**

Monitoring employees who work with hazardous drugs is part of a comprehensive safety program. Henry Ford Hospital and Health Network in Detroit brought together an interdisciplinary team to look at hazards in inpatient, outpatient and home health care. The team included employee health, pharmacy, environmental services, the safety officer and an oncology fellow.

“We wanted to make sure we didn’t miss anyone,” says **Karen Karwowski**, RN, MSN, Ed, CHSP, nurse manager of employee health services, who described her program at the recent conference of the Association of Healthcare Professionals in Healthcare (AOHP).

The committee identified the risk levels of differ-

ent employees and developed an extensive health questionnaire. Those who voluntarily participate in the program complete the questionnaire every two years and have some blood work and urinalysis. Participation varies from 20% to 80%, Karwowski says. Employees also view an online educational program.

So far, no adverse effects have been detected, but Karwowski notes, “we’re providing some comfort to our employees.”

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# Pertussis immunity wanes over time

## *Tdap booster important for HCWs*

**H**ealth care workers who received the acellular pertussis vaccine as children may have little immunity as adults, a new study suggests.

An analysis of about 10,000 vaccinated children in northern California found that in the five years after the fifth dose of DTaP, the risk of acquiring pertussis rose by 42% a year as immunity waned.<sup>1</sup>

The study did not address the immunity of adults, but the findings raise concerns about young health care workers who were immunized as children with the acellular vaccine, says **William Schaffner**, MD, chair of the Department of Preventive Medicine at Vanderbilt University in Nashville, TN, and past president of the National Foundation for Infectious Diseases.

DTaP (diphtheria, tetanus and acellular pertussis) came into use in the 1990s as health providers sought to avoid the adverse effects of the whole cell vaccine, including fever, pain at the injection site, and in rare cases, seizures and high fevers.

“[The study] quantifies the speed with which the immunity wanes,” says Schaffner. “That has surprised many people, myself included. The fall-off in immu-

nity of 42% per year. I had no idea it was that fast.”

The study analyzed vaccination history and pertussis PCR results from January 2006 to June 2011 for children who were between the ages of 4 and 12. Some 277 of them were pertussis PCR positive, 3,318 were PCR negative, and 6,086 were matched controls from the general population of Kaiser Permanente Northern California.

Children aged 8 to 11 years had the highest incidence of pertussis, which also pointed to the waning immunity after five doses. The pertussis cases were mild or moderate, and none required hospitalization or led to death, the authors said.

## Few HCWs receive Tdap

What do these findings mean for health care workers? They underscore the importance of booster vaccination of health care workers with Tdap, says Schaffner. Surveys show that only about 20% of health care workers have received the Tdap vaccine.

“We need to implement vigorously and comprehensively the current regulations,” he says.

Pertussis has become a growing concern as outbreaks ripple across the nation. As of September 20, the Centers for Disease Control and Prevention reported 29,000 cases and 14-pertussis-related deaths. In 48 states, pertussis activity was higher this year than in 2011. For example, in Washington state, 4,115 cases were reported as of September 15 — almost 10 times as many as in the same period in 2011.

Amid the concerns about waning immunity, the Advisory Committee on Immunization Practices, an expert panel that reports to the CDC, is expected to consider changes in recommendations. “There’s a question about whether more frequent boosters may be necessary,” Schaffner says.

If public health authorities determine there needs to be a new booster that provides acellular pertussis only (without diphtheria and tetanus), then the vaccine manufacturers would need to seek FDA approval, he says. Vaccine makers also might seek to make a more effective vaccine.

Older workers who received the whole cell vaccine as children may have more lasting immunity. But they still need the one-time Tdap booster, says Schaffner.

“Older health care workers are more likely to be protected, but we cannot be certain about that,” he says. “Everyone in the population should be vaccinated.”

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## Stress and sleepless nights bring pain

*Wellness includes work organization*

Your hospital may be causing your workers pain – and not just for the reasons you think. Job stress, including harassment from coworkers or unsupportive supervisors, contributes to musculoskeletal pain and injury and a host of other problems, according to a growing body of research.

As employers promote wellness for their workers, they should look at workplace factors that create stress and can lead to other ailments, says **Paula Grubb**, PhD, a research psychologist with the Division of Applied Research and Technology at the National Institute for Occupational Safety and Health in Cincinnati. “Teaching time management and relaxation doesn’t help with organizational issues.”

Twelve-hour shifts, which increase the risk of injury, may be unavoidable, but staffing, communication, training and supervisory support can be improved, she says.

Psychosocial problems can lead directly to physical ones. For example, one study found that long-term care workers got about a half-hour less sleep each night and had twice the risk of cardiovascular problems if their supervisors were less supportive of work-family issues.<sup>1</sup>

In fact, sleep deficiency is “a sentinel measure of problems in the workplace,” says **Orfeu M. Buxton**, PhD, neuroscientist and assistant professor in the division of sleep medicine at Harvard Medical School.

“A workplace that has a lot of conflict might increase insomnia symptoms,” he says. “A workplace that’s too rigid or inflexible may decrease sleep duration.” Harassment, such as bullying, has a similar effect, he says.

Fatigue has become a major concern in health care because of threats to both worker safety and patient safety — through an increase in medical errors, injuries and chronic conditions such as obesity. (*See related article in HEH, September 2012, p. 105.*)

### Three-quarters work with pain

Pain is a common plight of health care workers. Stress in the workplace makes it worse.

In a survey of almost 1,600 health care workers in

two major medical centers in the Boston area, 73% reported pain in the past three months. A third of them reported pain that was severe enough to interfere with their work.<sup>2</sup>

Nurses with a supportive supervisor, a higher status job title and safe patient handling practices were less likely to have sleep deficiency. Workplace problems, such as verbal harassment, increased sleep deficiency and pain.

While it might seem obvious that pain could cause sleep problems, research shows the reverse connection, as well, says Buxton. “The extent to which sleep deficiency is leading to pain is perhaps underappreciated,” he says.

“If you restrict sleep or deprive people of sleep in the lab, they have more spontaneous pain. A controlled pain stimulus is sensed as more severe,” he says. “If you have insomnia, pain sensing is also worsened.”

Other psychosocial issues may be related to pain among health care workers. In an eight-year prospective study at the University of Utah in Salt Lake City, people who had greater levels of depression and anxiety in baseline tests were more likely to report back pain years later.

“Data are increasingly robust that job factors, personal factors and psychosocial factors contribute to the risk of injury. True prevention programs will have to address all of these,” says **Kurt Hegmann**, MD, MPH, professor and director of the Rocky Mountain Center for Occupational and Environmental Health, a National Institute for Occupational Safety and Health Education Research Center. Hegmann is also editor-in-chief of the occupational medicine practice guidelines for the American College of Occupational and Environmental Medicine.

### Pain linked to medical errors

A detailed survey of 1,171 nurses in North Carolina showed how the worker and patient safety problems are inter-related: High rates of pain and depression, impaired productivity and increased medical errors.

More than two-thirds (71%) of the nurses reported working with pain; 18% reported depression. A majority of them also indicated that health problems had affected their productivity. “Presenteeism,” or lower productivity due to physical or emotional health problems, was associated with an increase in patient falls and medical errors and a decrease in the self-reported quality of care.<sup>3</sup>

“Our findings indicate that musculoskeletal pain and depression are among the major causes of nurses’ presenteeism,” the authors said. “Our findings also

support research that has identified pain and depression as significant contributors to decreased work productivity.”

Programs that address stress management as well as organizational factors provide the best opportunity to make an impact and improve worker health, says Buxton. “You intervene at the individual level with information, resources and tools, but you also intervene at the unit level to change workplace practices,” he says.

The patient safety link may help you get support to make the changes, says Grubb.

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## Caution urged on wellness incentives

*Make sure targets are fair, groups urge*

Six health care organizations have come together with one strong message: Be careful in your design of wellness incentives so that they don't treat some employees unfairly or restrict access to health insurance.

Wellness incentives have become increasingly popular among the nation's employers, including hospitals. More than two-thirds of employers use incentives to encourage employee participation in health promotion programs, according to a 2012 Towers Watson/National Business Group on Health employer survey.<sup>1</sup>

A growing number of employers are using “outcomes-based” incentives — which base financial rewards or penalties on meeting successful goals, such as smoking cessation or weight loss. That was the focus of the joint statement, which provides detailed guidance on designing wellness incentives so they encourage good health habits but are not discriminatory.

The statement was drafted by the Health Enhancement Research Organization, American College

of Occupational and Environmental Medicine (ACOEM), American Cancer Society, American Cancer Society Cancer Action Network (ACS CAN), American Diabetes Association, and the American Heart Association.

“It's a balancing act to try to foster movement in the right direction [toward better health] without being perceived as picking on those who medically were not dealt the deck of cards that make it so easy to do that,” says T. Warner Hudson, MD, medical director of occupational and employee health at the UCLA health system and campus and the immediate past president of ACOEM.

## Employers combat chronic disease

ACOEM and the other organizations are not endorsing outcomes-based incentives, Hudson notes. But they recognize the momentum. The workplace has become ground zero for combating the epidemic of chronic diseases.

Most employers start with incentives for employees to complete a health risk assessment, to talk to a health coach or to attend educational or exercise sessions.

“Some employers start to think, ‘Let's put in some rewards if people hit some targets, whether they move the needle on their weight or they succeed in quitting smoking,’” says Hudson. “If you're going to do that, what are some of the boundaries around the programs that have outcomes based incentives?”

Smoking cessation is the most common target. About 35% of employers provide rewards or penalties related to smoking or tobacco use, and another 17% were planning to add them in 2013, according to the Towers Watson/National Business Group on Health survey.

Only 10% of employers used other targets, such as weight management or cholesterol levels, but another 23% of employers said they planned to add such targets in 2013, according to the report.

## Offer 'reasonable alternative'

There's a delicate balance between providing resources, including incentives, for employees to improve their health status and punishing employees for having a chronic health condition. HIPAA allows employers to design outcomes-based incentives valued at up to 20% of the cost of health care coverage (the employer and employee contribution). In 2014, the Affordable Care Act will increase that cap to 30%. (Employees who meet the goal would receive a discount off their premium.)

Employees must be offered a “reasonable alternative standard” or a waiver if they have a medical condition that would make it medically inadvisable to meet the target, or if they would need medical intervention, the joint statement notes.

“You do have to be sensitive to the ADA [Americans With Disabilities Act] issues and people who have medical conditions,” Hudson says. “[For example,] kidney failure will give you high blood pressure.”

Likewise, someone with a joint replacement or back injury might be unable to reach a target based on an exercise program. Employees may be required to provide a note from their physician regarding a disability or medical condition, but HIPAA, ADA and state regulations still protect the privacy of their personal health information.

For people with lifestyle-oriented chronic conditions, incentives can become discriminatory if they are difficult to meet and if they produce a significant financial penalty, the joint statement says.

## Commit to a culture of safety

Whether you design wellness incentives based on participation or outcomes, there are some other workplace considerations. Employees will view the efforts more favorably if you also have demonstrated a strong commitment to a safe workplace, says Hudson.

“The culture of health and safety has to be palpable for initiatives to work well,” he says.

Employers should provide opportunities for healthy habits in the work environment, such as stairwells that are wide and inviting, walking paths, healthy food in the cafeteria and vending machines, and periodic farmers’ markets, he says.

Work may impact employee health habits in other ways. For example, the night shift has been associated with health risks, including obesity, depression, fatigue and gastrointestinal disorders. (*See HEH, June 2010, p. 71.*)

Of course, hospitals require 24-7 staffing. But what if the work schedule puts the employee at a disadvantage in meeting personal health goals?

Ultimately, health care employers may need to address the fatigue and sleep issues associated with workers on night shifts, says Hudson. “I think it’s the health issue of the next decade, to begin to foster better fatigue management and sleep hygiene in the workforce,” he says.

*[Editor’s note: The joint statement, Guidance for a Reasonably Designed, Employer-Sponsored Wellness Program Using Outcomes-Based Incentives, is available at [\*Joint%20Consensus%20Statement.pdf.\]\*](http://www.acoem.org/uploadedFiles/Public_Affairs/Policies_And_Position_Statements/JOEM%20</a></i></p></div><div data-bbox=)*

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## A bend in the road to needle safety

*Curved not straight means fewer injuries*

Sharps injuries from suture needles aren’t necessarily happening in the operating room. As Sinai Health System in Chicago discovered, they may occur during the insertion of central lines or other procedures outside the OR. And they can be prevented.

Sinai Health System dramatically reduced non-OR suture sticks by improving training and replacing straight needles with curved ones.

“It’s a multipronged approach. You really have to look at where the sticks are happening and what is actually happening at the time the needlestick occurred,” says **Jan Lepinski**, MSN, RN, CIC, director of infection prevention and control at Sinai, who was scheduled to speak at the annual conference of the Association of Occupational Health Professionals in Healthcare (AOHP).

Sinai looked at each needlestick as a root cause analysis — an opportunity to figure out what happened, why it happened, and how it could be prevented. Overall, 28.9% of the system’s sharps injuries involved suture needles.

“When we started digging deep into why we had all these needlesticks, we found a third of them were [from] straight needles,” says **Leslie Zun**, MD, chairman of the Department of Emergency Medicine and medical director of employee health and chair of emergency medicine at Chicago Medical School.

As it turned out, the straight needles were primarily used in procedure kits. “We thought, ‘That’s an easy fix, we’ll just remove them from all procedure kits and put in curved sutures and needle holders,’” says Zun.

But the kit packers said kits with curved needles would have to be custom-made — and would cost twice as much.

Sinai found a cheaper solution. Materials manage-

ment attached a suture set and a curved needle to the outside of every kit. “We haven’t had any straight line sticks since the implementation,” says Lepinski. “The last one we had was in June 2011.”

Sinai took other steps to improve sharps safety. When possible, Sinai is replacing sutures with tissue adhesive or staples. The health system encouraged reporting and asked managers to discuss needlesticks with employees to see if they need re-training.

The Sharps Injury Prevention Committee keeps an eye on trends with needlesticks. And Sinai has placed an emphasis on education.

“We found part of the problem was an educational issue,” says Zun. “Anyone doing suturing needs to understand how to do it without touching the needle. Needlesticks from suturing primarily

occur when someone picks up the needle to position it.”

Zun and his colleagues created a video to teach the proper technique. It also discusses the greater risks associated with straight needles and why they should use the curved needles instead. It includes information on needleless methods of closure and what to do if there is a needlestick.

Sinai now has a grant from Ethicon to make a more professional version of the video, which eventually will be available online, Zun says. ■

## CNE QUESTIONS

- In a 2002-2004 online survey, about how many clinical laboratory directors reported a lab-acquired infection had occurred in their lab?
  - 15%
  - 22%
  - 33%
  - None reported a lab-acquired infection.
- What does the National Institute for Occupational Safety and Health recommend for annual medical surveillance of health care workers who handle chemotherapy agents?
  - Medical questionnaire, blood tests and urinalysis
  - Medical questionnaire, blood tests, urinalysis and genetic testing
  - Medical questionnaire only
  - No medical surveillance is necessary unless a problem is detected.
- According to a survey of almost 1,600 health care workers in two major medical centers in the Boston area, how many reported working with pain in the past three months?
  - 24%
  - 53%
  - 66%
  - 73%
- Which of the following is an example of a target for an outcomes-based incentive to promote employee wellness?
  - Participation in a health risk assessment.
  - Successful smoking cessation.
  - Attendance at weight management classes.
  - Reduction in sick leave days.

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  - Pass the online tests with a score of 100%; you will be allowed to answer the questions as many times as needed to achieve a score of 100%.
  - After successfully completing the last test of the semester, your browser will be automatically directed to the activity evaluation form, which you will submit online.
  - Once the completed evaluation is received, a credit letter will be e-mailed to you instantly. ■

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- After reading each issue of Hospital Employee Health, the nurse will be able to do the following:
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  - describe how the clinical, administrative and regulatory issues particular to the care of hospital employees affect health care workers, hospitals, or the healthcare industry at large;
  - cite solutions to the problems faced in the care of hospital employees based on expert guidelines from relevant regulatory bodies, or the independent recommendations of other employee health professionals.

## COMING IN FUTURE MONTHS

- ANA panel develops patient handling guidelines
- Depression rates high in nurses
- California cracks down on patient handling
- Rewarding environmental services workers for safe practices
- Getting ready for flu vaccine reporting

United States Postal Service

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