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INSIDE

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Accident investigations: Consider root causes, prevention opportunities, and '4Ps'

Objectivity, documentation skills make OHNs natural investigators

Occupational health nurses have to be the salespeople of safety and accident prevention in their workplaces, all while having little actual control over safety and prevention.

"It's a difficult job for occupational health nurses and safety professionals to deal with," says **Gerry Burke**, MS, BSN, RN, an occupational health consultant and the safety manager for a Pennsylvania printing company.

Occupational health nurses know that investigations of accidents and near-misses can provide important insights into operations and processes, and present opportunities for improvement. Burke suggests that by examining what she terms "the four Ps" — people, parts, positions, and papers — the occupational health nurse stands the best chance of turning an accident or near-miss into a valuable learning experience.

"Administration and managers' goal is productivity, and sometimes safety gets swept by the side — not intentionally, because their heads are in the right places," says Burke. "If you're not productive, you're not going to survive."

Is there such a thing as an 'accident'?

Burke says she doesn't care much for the term accident. "Accidents are so preventable — they are really incidents," she insists. "They are preventable. We have control over them."

The American Association of Occupational Health Nurses (AAOHN), in a recent bulletin to members regarding incident investigations, notes, "In occupational health and safety, 'incident analysis' is replacing 'accident (implying chance, not preventable) investigation' (implying search for the guilty party or one element or person responsible) because of the somewhat negative connotation of the older terminology." (*See "Resources," p. 3).*

Though an accident or incident or near-miss might not be the result of intentional negligence or mismanagement, Burke says, many can be tracked back to management decisions.

"A lot of accidents that do happen go back to management, not ensuring that rules are enforced, or they have not thought out the position that employees are in," she explains. "Safety and health [requirements] are seen as a nag, or as counterproductive, when in reality they can prevent lots of

production and maintenance problems in the first place."

An example she gives of an accident occurring because of employee positioning occurred when one employee on a mezzanine above the floor called down to a co-worker to toss a rag up to him. The rag had solvent on it — as was intended — but when the worker on the floor threw the cloth up, solvent dripped back down into his eyes.

The issue that should have been addressed to avoid such an event, Burke says, is the fact that there was no good way to take tools and materials from the floor to the mezzanine level. The only way up or down was via a ladder.

"We had never given employees a good way to carry things up to that level," she continues. "They have to use ladders, and we want them to use two hands, so they can't carry things. That's a management problem — they need a winch or hoist system in that setting."

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Editorial Questions

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Other incidents are not the result of safeguards being in place, but of the safeguards not being observed or enforced.

"It's left up to safety — management says 'you train them, and we don't want to be bothered reminding them to adhere to safety,'" she says. "I get very frustrated with that, because a lot of times administrators and managers are not trained to manage other people — a lot of times, supervisors are in their jobs because they have done well at their tasks, not because they are ready to manage other people."

AAOHN's bulletin on incident analysis makes a similar observation: "A superficial incident analysis may conclude 'worker error' caused the incident, and the proposed preventive action is 'reprimand the worker' or 'tell the worker to be more careful.' This approach acts as a barrier to developing preventive occupational health and safety practices. The theory of accident proneness has no empirical foundations. The real key to successful incident analysis is identifying root causes and underlying system failures."

Use '4 Ps' to guide investigation

When Burke approaches an accident or near-miss investigation, she looks at the people, positions, parts, and paperwork that were directly or indirectly associated with the incident:

• People — Interview the people who were involved and those who were close by when the incident happened. Burke says it's important not only to know what they may have experienced, seen, or heard, but also what their relationship is to the team and the others involved.

"There may be a tendency to cover for each other, because they don't want to see someone in trouble for an unsafe act," says Burke. "Sometimes, a supervisor will start an investigation; look at the people aspect of that. They are also responsible for the people and the process, so will they get the answers you need?"

On the other hand, she says, occupational health nurses can come in as impartial investigators, look at the available information and evaluate it, and determine if it makes sense.

• Positions — The location of equipment and people at the time of an accident or near-miss is important to establish, she says. What could the people in the area have seen? How good was the lighting? Were parts or equipment moved after the incident, or at the time of the incident were they in atypical locations?

"Diagram the scene, take photos, or both," recommends Burke. "Recall is difficult over time, so trying to get something at the scene as soon as possible is important. And be careful about taking pictures, because plant managers might not like it."

Photos taken at the scene of an accident or near-accident are excellent educational tools, she adds. "Show what's wrong — or what's right —- with this picture."

• Parts — If the incident involves equipment or tools, learn about the parts. Ask the people who work with the equipment if it was performing correctly, if there were problems. If a piece of equipment is broken, lab analysis might be needed to detect hairline cracks and other details.

"Ask questions about the parts being used," suggests Burke. "If substitute parts are being used to save money or because the original parts are not available, they might not have been appropriate or strong enough."

• Paperwork —- Documentation can tell the occupational health nurse whether the right person was doing the appropriate work at the time or location of the incident.

"Was someone out sick and someone filling in who wasn't as experienced?" Burke suggests asking. "Were they following the manuals? Did they even have manuals?"

Paperwork can indicate whether employees were aware of hazards involved in the process or with the equipment; if standard operating procedures were followed as a rule; and whether the employees involved had ever had previous incidents indicating a pattern of unsafe practice.

"You don't want to blame employees for a management problem, but if there's a consistent problem with an employee, you need to deal with it," she explains. "You're not looking to blame, but toward getting good information to prevent recurrences."

Get good information, then put it to work

The most useful information to be gleaned from an incident or near-miss is probably going to come from the people who work in the area or with the equipment or processes involved, points out Burke. Maintenance workers can be very helpful, due to their knowledge of repairs or problems.

Documentation of the incident will likely be assigned to the nurse, "because everyone knows that nurses document well," Burke comments. "Hopefully, you have enough on paper that you feel good about it."

At Burke's workplace, accident findings (minus the names of the people involved) are dated and posted alongside a report detailing prevention strategies and a request that workers try the prevention strategies and report back to the safety committee about their effectiveness.

The nurse might be called on to participate in "acceptable risk" discussions, when decisions are made balancing cost and risk.

"Even with the space shuttle, there are accepted risks," says Burke. "They can't engineer out everything — it would cost too much. So you say 'we can accept this risk, but not that one.'"

The acceptable risk discussion is most commonly seen when new equipment is being purchased, and safety add-ons are debated. Each safety feature comes at a price, and at some point, Burke says, there is likely to be a decision on whether the likelihood of an event is outweighed by the cost.

If the occupational health nurse can demonstrate that he or she is interested in understanding what the factors are that contribute to safety issues and is willing to help out, rather than simply offering negative feedback — even so far as offering to help locate parts — he or she is then seen as a team player and not just a maker and enforcer of rules.

"What's hard to change is the cultural issue, when time goes by and they lapse back into the behaviors [that contributed to the accident]," she explains. "That's when nurses can be a real pain in the neck. But if we've had another accident or near miss, then we're repeating the same problem, and people don't like to hear that. "But that's our job, and we need to keep after it." ■

Source and Resource

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American Association of Occupational Health Nurses (AAOHN), Atlanta, GA. Phone: (770) 455-7757. "Incident analysis" advisory available online at www.aaohn.org/practice/advisories/upload/advisory_incident.PDF.

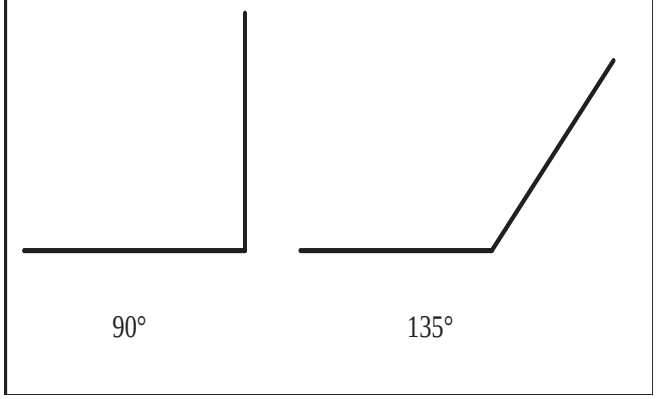
If your back hurts, don't sit up straight in your chair

Leaning back while sitting takes pressure off the spine

Chair position and posture are the first elements considered when someone who works at a desk job complains of back pain.

Table

Sitting Postures



But encouraging him or her to sit up straight might be the wrong advice, according to one expert.

Sitting in a supported semi-reclined position — 45° backward from back-straight 90° posture — places less strain on the spine, says **Waseem Amir Bashir**, MBChB, FRCR, a fellow of the University of Alberta (Canada) Hospital radiology department (*See Figure, above*).

Bashir and his colleagues used magnetic resonance imaging (MRI) to study 22 volunteers who had no history of back pain. Each subject was scanned in three different positions — sitting up straight, slouching, and reclining slightly in a 135° posture. A "positional" MRI machine was used, which allows patients freedom of motion — such as sitting or standing — during imaging. Traditional scanners have required patients to lie flat, which may mask causes of pain that stem from different movements or postures.

The researchers concluded that the strain of sitting upright for long hour creates or contributes to chronic back problems.

"A 135° body-thigh sitting posture was demonstrated to be the best biomechanical sitting position, as opposed to a 90° posture, which most people consider normal," according to Bashir. "Sitting in a sound anatomic position is essential, since the strain put on the spine and its associated ligaments over time can lead to pain, deformity, and chronic illness."

Work-related backaches a major pain

Back pain, according to the National Institute of Neurological Disorders and Stroke, is the most common cause of work-related disability in the United States and a leading contributor to job-related absenteeism. It costs Americans nearly $50 billion annually, and sitting is determined to be the root cause of the pain in many cases.

"We were not created to sit down for long hours, but somehow modern life requires the vast majority of the global population to work in a seated position," according to Bashir. "This made our search for the optimal sitting position all the more important."

When strain is placed on the spine, the spinal disks start to move and misalign. At a 90° sitting position, this movement was most prominent. The disks were least moved when subjects were sitting back at a 135° sitting position, the University of Alberta researchers found.

Sitting on a chair that provides proper support at a slight backwards tilt puts the back in this optimal position. Slouching was the most stressful position. It caused a reduction in the spinal height, creating a high level of wear and tear in the lower spine.

"This may be all that is necessary to prevent back pain, rather than trying to cure pain that has occurred over the long term due to bad postures," Bashir suggests. "Employers could reduce problems by providing their staff with more appropriate seating, thereby saving on the cost of lost work hours." ■

For more information:

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CDC says more employees will be affected by arthritis

Data indicates one in four will have symptoms of hip arthritis

Arthritis already takes a huge toll on health and productivity in the United States, and the Centers for Disease Control and Prevention (CDC) has new data showing that one in four Americans will develop symptomatic hip arthritis by age 85.

Then number of people in the United States with arthritis or chronic joint symptoms has been creeping up, from 35 million in 1985, to 43 million in 1998, and last year (2006) to 46 million.

Researchers took a closer look at this condi-

tion because it can be even more disabling than the more frequently occurring knee arthritis, says **Louise Murphy**, PhD, a CDC epidemiologist who presented the new data recently at the American College of Rheumatology/Association of Rheumatology Health Professionals' Scientific Meeting. Besides being physically disabling, hip arthritis costs $8 billion every year in hip replacements, which number 226,000 a year, giving both patients and their health plans reason to take note, she points out.

The risk estimates were derived from data collected for the Johnston County (NC) Osteoarthritis Project, a long-term effort by the CDC and the Thurston Arthritis Research Center at the University of North Carolina, Chapel Hill. Of the more than 3,000 people followed, women were found to be at higher risk of symptomatic hip arthritis than men, 28% compared with 18%, and risks for blacks and whites were similar. The greatest difference emerged when body mass index was calculated. Those of normal weight had a 20% risk compared with those who were overweight (25% risk) or obese (39% risk).

"Our results show another major public health problem associated with the aging population, one that may be aggravated by overweight and obesity," says Murphy. "However, weight management and physical activity are proven strategies in reducing pain associated with osteoarthritis, and disease self-management programs such as the Arthritis Self Help Course and the Chronic Disease Self Management Program may help people manage their arthritis."

Smoking adds to risk of arthritis

Smokers risk more painful and progressive osteoarthritis than non-smokers, suggest findings based on 159 men who had osteoarthritis of the knees, and who were monitored for up to 30 months.

According to the data that appeared in December in Annals of the Rheumatic Diseases, the affected knees were scanned and the severity of pain scored. The men were monitored and again at 15 and 30 months. Of the total, 12% (19) were active smokers at the start of the study. They smoked an average of 20 cigarettes a day and had done so for around 40 years.

Smokers tended to be younger and thinner, both factors that normally protect against osteoarthritis. But the smokers were more than twice as likely to have a significant degree of cartilage loss compared with the non-smokers, diminishing the cushioning of bones at joints.

Smokers were also significantly more likely to report greater pain severity.

The authors suggest that smoking may alter the pain threshold. It also increases the levels of toxic substances in the blood and starves tissues of oxygen, which may hasten the loss of cartilage.

Suzanne Bade, MPH, OTR, an occupational therapist with the University of Michigan's MWorks program, says arthritis will become a more and more important issue as America's workforce ages. ("Ergonomics, job fit can affect aging workers," OHM September, 2005.)

To prevent aggravation of arthritis, she advises, equipment should be padded so that it doesn't put pressure on sore joints. Changing the size of equipment to make it easier to handle or access can also lessen the impact arthritis has on a worker's performance. ■

Source

1. Amin S, et al. Cigarette smoking and the risk for cartilage loss and knee pain in men with knee osteoarthritis. *Ann Rheum Dis.* 2006. [Epub ahead of print].

Joint Commission standard on flu shots

Infection control standard doesn't require declination forms

As of this month, the Joint Commission on Accreditation of Healthcare Organizations requires accredited organizations to offer flu vaccines to staff and volunteers. While the commission is not calling on hospitals to meet a benchmark immunization rate, it but does expect the standard to begin pushing national rates up from the current 40% range.

The standard for offering influenza vaccinations to staff — including volunteers and licensed independent practitioners who are in close patient contact — is now an accreditation requirement for Critical Access Hospital, Hospital, and Long-Term Care accreditation programs.

"Preventing the spread of the flu protects patients and saves lives," insists JCAHO standards division vice president **Robert Wise**, MD. Current vaccination rates among health care workers, he says, "are abysmally low."

The Joint Commission standard requires hos-

pitals seeking to gain or keep accreditation to:

- 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.

Push to boost health care vaccination rates

The Joint Commission developed the standard in response to recommendations by the Centers for Disease Control and Prevention (CDC), making the reduction of influenza transmission from health care professionals to patients a top priority in the United States. While the CDC has urged annual influenza vaccination for health care workers since 1981, CDC guidelines published in 2006 call for stronger steps to increase influenza vaccination of health care workers.[1] Despite the recommendations, the vaccination rates as measured by the CDC remain low.

Studies show that influenza causes 36,000 deaths and over 200,000 hospitalizations on average in the United States annually. Furthermore, health care-associated transmission of influenza has been documented among many patient populations in a variety of clinical settings, and infections have been linked epidemiologically to unvaccinated health care workers.

Justifying the requirement, Wise says, is evidence that patients get the flu from their health care providers.

In two separate studies in geriatric long-term care facilities, total patient mortality was significantly lower in those sites where health care workers were vaccinated compared to sites where routine vaccination was not offered to health care workers (10% vs. 17% and 14% vs. 22%).[2,3] Increased rates of health care worker vaccination also correspond with a significant decrease in the incidence of health care-associated influenza.

"It has been demonstrated epidemiologically that patients are getting flu from health care workers," Wise says. "One of the particular problems is that, by the time that the health care worker is symptomatic, they have already been infectious for a couple of days. The only way to deal with that is to get the vaccine. If you tell someone to stop coming to work when they have symptoms, it is not going to work. It is too late."

In recent years, the Joint Commission has issued tougher standards and patient safety goals focused on infection control, but it is an open question whether JCAHO has built enough momentum to take on the entrenched resistance to seasonal flu vaccination by health care workers. Moreover, many of those recalcitrant workers are nurses, the very backbone of the health care delivery system. The reasons typically given for refusing vaccination are the perception that they pose no risk to patients, fear of vaccine side effects, fear of needles, or belief that the vaccine causes the flu.

In an age of patient safety — which the Joint Commission is now emphasizing in many of its standards and accreditation activities — there is a glaring disconnect in having large numbers of health care workers unvaccinated every flu season. "Certainly people have looked at it from an employee health point of view — all the time lost from work, etc.," Wise says. "But one of the areas that the CDC has particularly [emphasized] is transmission from the health care worker to the patient."

The Joint Commission standard requires hospitals to offer flu vaccine but stops short of requiring declination statements. Instead, hospitals are to annually evaluate vaccination rates and reasons for nonparticipation and implement program enhancements to improve participation.

Declination statements hotly debated

"[Whether to use declination statements] was one of the most hotly debated issues," Wise says. "The question was whether declination statements truly added to improving the rates or do they just add a burden on the hospital."

Rather than filing a declination form for individual workers, hospitals can assess reasons for noncompliance through surveys, he notes. "It's a lot less burdensome."

Indeed, he adds the Joint Commission does not see enforcement of the standard to be a complicated matter. "You either know your rates or you don't. You need to know your [immunization] rates," Wise says. "You need to demonstrate what are potentially the issues about why you do have a better rate. Then you need to do something to

enhance the program to increase it."

JCAHO had a major impact on hand hygiene practices in the nation's hospitals after it made CDC recommendations for alcohol hand rubs a national patient safety goal.

"That is a particularly powerful one, at least from a process point of view," Wise says. "If you go into almost any hospital now you will see the alcohol hand rub containers. The CDC has done two surveys and is finding that well over 90% of all hospitals are now using alcohol-based hand rubs."

He hopes the standard on flu vaccines will have a similar impact.

"Whether it will [carry the same importance] as MRSA [methicillin-resistant *Staphylococcus aureus*] infection or something like that, I leave it up to the experts," Wise says. "But it is an important process measure that may [reflect] the overall culture of the organization."

To read the Joint Commission infection control standard on health care worker vaccinations, go to www.jcrinc.com/publications; click on the "Publications" tab, then on the link to "Joint Commission Perspectives." Scroll down to "JCAHO Requirements," click on it to take you to the "Hospitals" link, and then scroll to "Surveillance, Prevention, and Control of Infection." ■

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1. CDC. Influenza Vaccination of Health-Care Personnel Recommendations of the Healthcare Infection Control Practices Advisory Committee (HICPAC) and the Advisory Committee on Immunization Practices (ACIP) *MMWR Recomm Rep*. 2006;55:1-16.

2. Carman WF, et al. Effects of influenza vaccination of health-care workers on mortality of elderly people in long-term care: A randomised controlled trial. *Lancet*. 2000;355:93-97.

3. Potter J, et al. Influenza vaccination of health care workers in long-term care hospitals reduces the mortality of elderly patients. *J Infect Dis*. 1997;175:1-6.

Match worker at hiring to prevent injuries

Hospital does functional assessment first

The first steps to prevent injury at Mercy Medical Center-North Iowa in Mason City occur even before an employee begins his or her job.

The hospital conducts a pre-employment functional assessment with an isokinetic machine — a device that measures muscle strength and endurance. As the potential employees press or pull against a bar, using their arms, legs, or trunk, the device varies the resistance to match the person's output.

The result is an objective way to determine a person's physical capabilities, says **Steve Crane**, PT, physical therapy manager. "It measures through the whole range of motion of the body. You can either perform the functions or you can't," he says. "It will demonstrate clearly what a person's output is."

Mercy Medical Center uses many measures to prevent employee injury, including lift equipment. An in-house ergonomist meets with all new hires to help them set up their work stations or to discuss their job's physical demands and ways to reduce hazards.

The functional assessment is one other important piece, says employee health nurse **Jenean Wolterman**, RN, BSN, MA. "The goal is to be able to better match the right person to the job so they're not injured," she says.

The hospital identified 44 job positions that are considered physically demanding, including food service and nursing. "We've targeted principally the areas of highest risk," says Crane.

Each job has been assessed and received a designation. For example, nursing is considered "light" physical demand, due to the use of assistive devices, although flight nurses must meet the "light-medium" level. Carpenters fall under the "medium" demand classification. (The lowest category is "sedentary" and the highest is "very heavy.")

About 15% of the people who undergo the functional assessment do not pass, says Crane. "It's difficult to have to deny someone [a job], but you also don't want to put them into work where they're going to get injured. The idea is to protect the employee," he says.

The ET2000, created by two physical therapists who now run Cost Reduction Technologies, of Davenport, IA, is a method to test core body strength, says company president Loren Arp, PT. Annual tracking shows that when it is used as a pre-employment tool, "98.3% of the time, the person works injury-free," he says.

Employers lease the device for a one-time fee of about $25,000. They also pay a fee per exam, at a rate that is based on issues such as volume. It may also be used to assess fitness to return to work after an injury. "If someone is returning to work after an injury, we want to determine what their abilities are

so we can match them to their work or make reasonable accommodations," says Crane.

The functional assessments comply with the Americans with Disabilities Act requirements, he says. "If they're offered the job, we always have to look at whether a reasonable accommodation can be made," says Wolterman. "But if they physically aren't strong enough, that's got to be a first priority."

Mercy Medical Center conducts functional assessments for outside clients, which provides revenue and helps cover the costs of the machine, says Crane.

Meanwhile, it has tracked new employees who received the functional assessments. For example, nutrition services is a physically demanding job that involves lifting heavy items. In the past year, none of the new hires has suffered from a lifting injury, Wolterman says. ■

Learn more:

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Cost Reduction Technologies, Davenport, IA. Phone (563) 391-6995, or online at www.costreductiontech.com.

NY workplace violence prevention act: Assess risk

Law applies to all public employers and health care facilities

New York has become the latest state to enact specific legislation to help stem the tide of workplace violence by requiring certain public employers (employers with more than 20 employees, and including most health care settings) to proactively evaluate the safety of their workplaces, develop and implement workplace violence prevention programs, and provide workplace safety training to all employees. The new legislation, the New York State Workplace Violence Prevention Act, went into effect in October 2006. It mandates that employers evaluate working conditions for circumstances that often precede incidents of violence, including:

- Employees working late at night or early in the morning;
- Employees exchanging money with the public;
- Employees working alone or in small numbers;
- Uncontrolled access by the public to the workplace; and
- Areas of previous security problems.

Where an evaluation of workplace conditions reveals that one or more of these or other circumstances exist creating an increased risk of workplace violence, the employer is asked to prepare and implement a written workplace violence prevention program including such steps as:

- Making high-risk areas more visible to more people;
- Installing good external lighting;
- Using drop safes or other methods to minimize cash on hand;
- Posting signs stating that employees have limited cash on hand; and
- Establishing reporting systems for incidents of aggressive behavior.

In addition to conducting a workplace evaluation, and preparing and implementing a written workplace violence prevention program, covered employers must also provide annual training to their employees regarding: 1) the existence, location and details of the employer's written workplace violence prevention program; and 2) steps the employees can take to protect themselves from workplace violence.

"The bill is probably the most sweeping antiviolence workplace bill in the country," says **Jonathan Rosen**, MS, CIH, director of the occupational safety and health department at the New York State Public Employees Federation in New York City. "It covers just about every type of public-sector workplace."

Health care workers in mental health facilities face the greatest risk of assault, says Rosen. But emergency department staff also suffer from assaults. In 2004, more than 6,700 hospital workers suffered lost-work-time injuries because of assaults, according to statistics compiled by the Bureau of Labor Statistics.

"The culture is that it's part of the job," says Rosen. "[Workers feel that] you should expect it if you work in a hospital emergency room or in a psychiatric hospital or with the mentally retarded. [They should be educated] that no one should be assaulted, yelled at, threatened, kicked, spit on. That's not part of anyone's job." ■

Sleeping on the job not a bad idea for ED docs and nurses

Staff who took naps awoke better performers

Emergency department physicians and nurses who are encouraged to take short naps while working the night shift experience fewer performance lapses and find themselves feeling more

energetic and alert, according to an expert on sleep deprivation.

Steven Howard, MD, an associate professor of anesthesia at Stanford University, hopes that scientific data he and fellow researchers have generated that supports the benefits of napping will cause hospitals and other employers to consider policy changes that include nap breaks to help improve safety and performance levels.

"Napping is a very powerful, very inexpensive way of improving our work," says Howard.

The Stanford study found that emergency department doctors and nurses who were allowed to have a short nap while working the night shift were more alert, in better moods, and did a better job performing a simulated intravenous insertion than those who didn't get a nap.

Despite the findings, Howard and his co-authors acknowledge that there is strong bias against sleeping on the job.

Lack of sleep has serious effects

Stanford researchers created two teams from 24 nurses and 25 doctors who worked from 7:30 p.m. to 7:30 a.m. in Stanford Hospital's emergency department. One team worked the shift as usual, with no nap, while those on the other team took a 40-minute nap about two thirds of the way into their shift.

Each team was evaluated at the end of their shift with tests that included a written memory test, computer-based IV insertion simulation, a simulated car drive, and a series of questions designed to show moods or sensations (depression, fatigue, vigor, depression, confusion, etc.).

Those who had taken a nap were less sleepy, less fatigued, said they had more energy, performed the IV insertion and driving tests better, and experienced fewer performance lapses.

Howard is putting the results of the study into practice by launching a sanctioned napping program at the Veterans Affairs Palo Alto (Calif.) hospital. He says the Palo Alto program marks the first time a napping program has been put into place for health care workers.

Medical providers are not the only workers who could benefit from naps, according to sleep researchers.

According to statistics on America's need for sleep, plenty of people could use a nap. More than 50 percent of Americans are sleep-deprived — the recommended sleep hours for adults age 16 to 65 is six to nine hours per night. The National Sleep Foundation's 2002 Sleep in America poll indicated the average American adult sleeps only 6.9 hours a night. Shift workers — such as those working the night shift in hospital emergency rooms, —- often average only five hours of sleep in a 24-hour period.

Another of the Stanford researchers, **Rebecca Smith-Coggins**, MD, an assistant professor of surgery in emergency medicine, says she has been concerned about the effects of sleep loss on physicians, who she says commonly complain of being tired.

The study's authors hope that by providing scientific data that supports the benefits of napping, more hospitals and other employers will consider policy changes that include nap breaks to help improve safety and performance levels.

"Being up for 24 hours has the same effects as being legally drunk," Howard suggests. "Caffeine and nicotine mask the effects of sleepiness, but naps actually replace lost sleep. It's totally different mechanistically."

In the Stanford study, while the subject group who took naps were less sleepy and more apt when it came to inserting IVs and taking driving tests, those who did not get naps often experienced "collisions" and ran off the road in their driving simulation tests, the authors report.

Howard says that while evidence reported in the literature points to the benefits of letting workers nap, there remains a cultural bias against it in U.S. workplaces — a perception that people who nap at work are lazy.

"The social connotation of someone who naps is lazy [and] slothful," Howard explains. "Attitudes toward people who nap are hard to break."

The full report on the Stanford study is available in the November 2006 issue of the American College of Emergency Medicine's *Annals of Emergency Medicine* (*Ann Emerg Med*. 2006;5:596-604). ■

Source:
Steven K. Howard, MD, associate professor of anesthesiology, Stanford University School of Medicine, Stanford, CA. Email: showard@stanford.edu.

Save on productivity by intervening now

Thousands saved over five-year period in Harvard study

Money spent by an employer today on depression intervention not only is in the employees' best interest, but can save the employer thousands.

"Depression exacts economic costs totaling tens of billions of dollars annually in the United States, mostly from lost work productivity," says **Philip Wang**, MD, DrPH, an assistant professor of health care policy at Cambridge, MA-based Harvard University. "Yet we're not making the most of available services and treatments."

Wang says an employer with 1,000 workers who actively seeks out and treats depression in the workforce would spend more on mental health services initially, but would end up saving nearly $3,000 over five years.

He bases the estimate on a simulation created from dozens of studies revealing that providing a minimal level of enhanced care for employees' depression would result in considerable cumulative savings. The analysis was sponsored by the National Institutes of Health/National Institute of Mental Health.

Such a concerted intervention would initially increase both employees' use of mental health services and employers' costs; it ultimately would save the company money by reducing absenteeism and costs relating to turnover.

"Our study calculates what employers' return on their investment would be if they purchased enhanced depression treatment programs for their workers," Wang explains.

The analysis simulated an enhanced intervention in which master's-level health professionals managed the care of a hypothetical group of 40-year-old depressed workers diagnosed with depression. In this scenario, after assessments had detected the workers' depression, the care managers did further assessments and, when necessary, referred the workers for treatment. The researchers gauged the cost-effectiveness for society and cost-benefit to employers, using data from existing trials and epidemiological studies.

The hypothetical workers were assigned to either the enhanced care or "usual care" — care-seeking and treatment patterns that normally would occur in the absence of care management. For both groups, treatment was defined in terms of visits to either a primary care physician or a psychiatrist who prescribed an antidepressant. Every three months, the hypothetical workers' illness status could change, based on depression prevalence, remission, and ongoing treatment rates, and the probabilities of various outcomes, including increased risk of death by suicide.

Weighing costs and quality of life

Using results of recent primary care effectiveness trials, the researchers estimated how successful care managers might be in helping workers seek out and adhere to adequate treatment regimens. While the cost-benefit analysis from employers' perspectives weighed only monetary factors, quality of life figured into the cost-effectiveness to society.

In the simulated scenario, savings from reduced absenteeism and employee turnover and other benefits of the intervention began to exceed the costs of the program by the second year, yielding a net savings of $4,633 per 1,000 workers. These savings were somewhat reduced in years 3 through 5, based on conservative assumptions that benefits wane after care management ceases, while increased use of treatments continues.

Intervention became more expensive than usual care (no workplace depression management) when there was greater use of psychiatrists (instead of primary care doctors) or brand-name (instead of generic) drugs. It also ceased to be cost-saving if employees spent more than four hours of work time in treatment per three-month cycle. Enhanced care had the most benefit in cases of higher-level employees who influenced the productivity of co-workers.

The intervention yielded gains when the simulated costs for care were consistent with those charged in the real world, suggesting that providing such programs for workers "appears to be a good investment of society's resources," say the researchers. ■

For more information:

Wang PS, et al. The costs and benefits of enhanced depression care to employers. *Arch Gen Psychiatry*. 2006;63:1345-1353.

Job Burnout: Add diabetes to list of health complaints

Researcher says burnout as harmful as smoking

Chronic job burnout — the core components of which are emotional exhaustion, physical fatigue, and cognitive weariness — might be a risk factor for the onset of type 2 diabetes in apparently healthy individuals, say Israeli researchers who have posed yet another health link to job stress.

Emotional burnout or stress has been shown in previous studies to be associated with heart disease and musculoskeletal pain, but this was the

first study linking it to type 2, or adult-onset, diabetes.

Samuel Melamed, PhD, a psychology professor at Tel Aviv University, led a team of researchers that has analyzed dozens of studies that center on the idea that burnout may negatively affect workers' physical health more than previously believed.

In the study released in November 2006, Melamed says findings suggest stress plays a significant role in the development of type 2 diabetes; however, the findings are not conclusive, and more research is called for.

"Earlier studies have found it to be associated with cardiovascular disease risk, sleep disturbances, impaired fertility and musculoskeletal pain," he says. "Our finding suggests that the potential damage to health may be greater than suspected and it may also include a risk of diabetes."

Burnout harm equal to smoking, inactivity

The Tel Aviv study examined 677 workers, three fourths of whom (76%) were men. Of the total, 17 developed type 2 diabetes during the three- to five-year follow-up period.

The authors of the study found that job burnout exposed workers to 1.84 times the normal risk of diabetes, even after adjusting for the effects of gender, obesity, age, activity levels, and smoking; when a smaller subset was examined and the potential effects of high blood pressure could be ruled out, the risk for diabetes posed by burnout increased to 4.32 times normal.

The authors say that job burnout may only be one of the factors contributing to diabetes.

"It is possible that these people are prone to diabetes because they can't handle stress very well," Melamed writes. "Their coping resources may have been depleted not only due to job stress but also life stresses, such as stressful life events and daily hassles."

The Tel Aviv researchers' findings appear in the November/December issue of Psychosomatic Medicine. ■

Smokers cost employers through lower productivity

Smokers cost employers approximately $4,400 per year in terms of lost productivity, compared with $2,600 per year for nonsmokers and $3,200 per year for former smokers, according to a study on smoking and job performance. The research, reported in the American College of Occupational and Environmental Medicine's Journal of Occupational and Environmental Medicine, quantifies the on-the-job productivity for current smokers, former smokers, and nonsmokers

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

- A CEO gets employees running
- Dial-up EAPs
- Color-coding safety information
- Assessing exposures

using survey results and both absenteeism and presenteeism. The study used the Wellness Inventory, a survey tool that measures lost productivity related to 11 common health conditions, to analyze data from nearly 35,000 employees at 147 companies.

The results show that current smokers missed more days of work and were less productive at work compared with former smokers and nonsmokers. According to the authors, in addition to lost workplace productivity due to absenteeism and presenteeism, smokers drive up employers' costs through direct medical costs for smoking-related disease, lost productivity due to smoking breaks, increases in fires and fire insurance costs, increased workers compensation costs, and early retirement due to smoking-related health problems. Current smokers were half as likely to report excellent health status compared with nonsmokers. ■

CE *questions*

1. Why do many occupational health professionals balk at the term "accident" when applied to workplace incidents?
A. Workplace incidents are preventable, unlike many true accidents.
B. Because most workplace incidents involve malice or negligence, not accident.
C. The term "accident" implies carelessness.
D. All of the above

2. Which of the following postures (in adult seated at a desk) created the most wear and tear on the lower spine?
A. Sitting upright at a 90° thigh-torso position
B. Slightly reclined at a 135° angle
C. Slumped forward
D. None are harmful

3. In recent studies of adults at risk for developing arthritis of the hip and knees, which of the following was/were found to be potential sign of greater risk?
A. Female gender
B. Obesity
C. Cigarette smoking
D. All of the above

4. Which of the following is NOT an influenza infection control standard set out by the Joint Commission on Accreditation of Healthcare Organizations for its accredited organizations?
A. Organizations must establish a mandatory influenza vaccination program for its staff and volunteers.
B. Every year, organizations must evaluate vaccination rates and reasons for nonparticipation.
C. Educate staff and licensed independent practitioners about flu vaccination and control measures.
D. Provide access to influenza vaccinations on site.

Answers: 1. (a); 2. (c); 3. (d); 4. (a)

Dear *Occupational Health Management* Subscriber:

This issue of your newsletter marks the start of a new continuing nursing education (CNE) semester and provides us with an opportunity to review the procedures.

Occupational Health Management, sponsored by AHC Media LLC, provides you with evidence-based information and best practices that help you make informed decisions concerning treatment options and physician office practices. Our intent is the same as yours — the best possible patient care.

Upon completing this program, the participants will be able to:

1. develop employee wellness and prevention programs to improve employee health and productivity;
2. identify employee health trends and issues;
3. comply with OSHA and other federal regulations regarding employee health and safety.

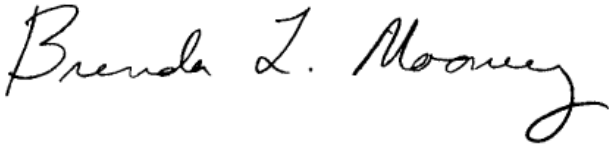
Each issue of your newsletter contains questions relating to the information provided in that issue. After reading the issue, answer the questions at the end of the issue to the best of your ability. You can then compare your answers with the correct answers provided in an answer key in the newsletter. If any of your answers were incorrect, please refer back to the source material to clarify any misunderstanding.

At the end of the semester, you will receive an evaluation form to complete and return in an envelope we will provide. Please make sure you sign the attestation verifying that you have completed the activity as designed. Once we have received your completed evaluation form, we will mail you a letter of credit. This activity is valid 24 months from the date of publication. The target audience for this activity is principal investigators and clinical trials nurses.

If you have any questions about the process, please call us at (800) 688-2421, or outside the U.S. at (404) 262-5476. You can also fax us at (800) 284-3291, or outside the U.S. at (404) 262-5525. You can also email us at: customerservice@ahcmedia.com.

On behalf of AHC Media, we thank you for your trust and look forward to a continuing education partnership.

Sincerely,



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