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THE PRACTICAL GUIDE TO KEEPING HEALTH CARE WORKERS HEALTHY

April 2013: Vol. 32, No. 4
Pages 37-48

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Financial Disclosure: Editor **Michele Marill**, Executive Editor **Gary Evans**, and Consulting Editor/Nurse Planner **MaryAnn Gruden** report no consultant, stockholder, speaker's bureau, research, or other financial relationships with companies having ties to this field of study.

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Information revolution: New national system to track occupational injuries

NIOSH targets slips, falls, patient handling, violence

Information is power — the power to prevent occupational injuries. That is the fundamental concept behind a new national surveillance system that will help health care employers track their injuries and compare them to other, similar facilities.

"The purpose is to collaborate in preventing exposure and injury among health care workers," says **Ahmed Gomaa**, MD, ScD, MSPH, medical officer in the Division of Surveillance, Hazard Evaluations & Field Studies at the National Institute for Occupational Safety and Health (NIOSH) in Cincinnati. "In order to treat any disease, you have to know the diagnosis first. You have to see what caused this [workplace] violence, injury, or musculoskeletal disorder."

This summer, hospitals will be able to enroll in the Occupational Health and Safety Network, an online reporting system. Information is currently available at www.cdc.gov/niosh/topics/ohsn/. Initially, NIOSH will collect data on slips, trips and falls, patient handling injuries and violent events. That may eventually be expanded to include needlesticks, asthma, respiratory disorders and skin disorders.

An Internet-based system will allow for confidentiality as well as swift feedback and benchmarking, says Gomaa. "We want to transform this data into information and get it back to the frontline worker," he says.

Currently, the primary source of national data on occupational injuries and illnesses is the U.S. Bureau of Labor Statistics, which conducts an annual survey of about 200,000 employers. Some workers' compensation insurers also track data. The BLS gives an incomplete picture of occupational injuries, critics say.

A more complete surveillance system would incorporate multiple sources of data on occupational injuries and illnesses, says **Kenneth Rosenman**, MD, chief of the Division of Occupational and Environmental Medicine at Michigan State University in East Lansing and a national expert on surveillance of occupational injuries and illnesses.

The NIOSH initiative could be a step forward, if a significant number of

hospitals participate and if they represent different hospital types and geographic regions, he says. *(For a related article on underreporting, see p. 39.)*

"It's good for the individual hospitals that participate," says Rosenman. "They'll get a better sense [of their injuries] and they'll get some feedback that they can use for targeting and prioritizing interventions."

Three ways to send data

Perhaps the single most important attribute of the new system is that it is user-friendly. NIOSH worked with 80 pilot facilities to find the best way of collecting data. They found that facilities varied in their methods of tracking occupational injuries, so the OHSN system works in three ways.

"If you are a small hospital collecting on Excel sheets, we give you the tools to do that," says Gomaa. "If you're using commercial software, we give you a mapping tool that makes it very easy to convert [the data].

NIOSH also is working with the major occupational health software vendors to facilitate reporting. "We wanted to make it easy for them to transmit the data to us in a standard form," he says.

Creating standard definitions is critical to benchmarking. "One of the biggest challenges is to get facilities to collect data in similar ways," says **Sara Luckhaupt**, MD, MPH, a medical officer with the Surveillance Branch.

While the OHSN will be voluntary, it will offer a window into occupational risks, says Gomaa. "By collecting data in a consistent way, you're going to benefit instantly," he says.

The NIOSH system will include details and denominators that aren't available from BLS or other sources. For example, hospitals can compare their rates based on full-time equivalent employees or number of patient beds. They can compare injuries in adult critical care with adult specialty care. They can compare injuries associated with repositioning in bed with injuries related to performing patient hygiene. They can determine how many injuries occurred when there was no patient handling equipment available or if the available equipment wasn't used.

Hospitals provide information on event severity, so they can track events that are not OSHA-recordable (that require first-aid only or no treatment).

Surveillance and solutions

Ultimately, the OHSN surveillance system will become a community of employers seeking to reduce their occupational risks. The site will include information about successful interventions to reduce injuries, with links to resources. It will even host an interactive forum, in which occupational health professionals post comments and questions.

"You can cut and slice your data in many, many ways," says Gomaa. "Once you figure out what your weak area is, then resources are in front of you. You can see if [your safety intervention] is really improving anything and you can share your experiences."

Hospital Employee Health® (ISSN 0744-6470), including The Joint Commission Update for Infection Control, is published monthly by AHC Media, 3525 Piedmont Road, Building Six, Suite 400, Atlanta, GA 30305. Telephone: (404) 262-7436. Periodicals Postage Paid at Atlanta, GA 30304 and at additional mailing offices. Web: www.ahcmedia.com

POSTMASTER: Send address changes to Hospital Employee Health®, P.O. Box 105109, Atlanta, GA 30348.

Subscriber Information

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This activity has been approved for 15 nursing contact hours using a 60-minute contact hour.

Provider approved by the California Board of Registered Nursing, Provider #14749, for 15 Contact Hours.

This activity is intended for employee health nurse managers. It is in effect for 36 months from the date of publication.

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The surveillance system also will be shaped by users' feedback, he says.

Meanwhile, efforts continue to expand the scope of national surveillance of occupational injuries. The Council of State and Territorial Epidemiologists in Atlanta is bringing together stakeholders to create a multi-dimensional surveillance system.

Ideally, a surveillance system should include a mechanism for employees to report occupational injuries, says Rosenman. NIOSH has added some questions to National Health Interview Surveys or states have added questions to the Behavioral Risk Factor Surveillance System, but a more consistent employee component is needed, he says.

After all, sometimes employees seek care from their personal health providers rather than reporting occupational injuries or illnesses, or they may even self-treat, Rosenman notes. But he says OHSN offers promise of obtaining important new information.

"If you did this [surveillance] on a random basis or if you had enough [participating hospitals in OHSN] and if you incorporate a workers component, I think it would be a major step forward," he says.

So far, about 200 to 300 hospitals have expressed interest in OHSN. "The real test is when we open this for enrollment," says Gomaa. ■

Dermatitis rates vastly under-counted

Real rate some 100 times higher

Health care workers may be suffering in silence from work-related dermatitis. Cases of work-related dermatitis are about 100 times greater than the rate reflected in federal data, and health care workers are at greater risk than most other occupations, according to an analysis of the National Health Interview Survey.[1]

Almost one in 10 (9.2%) health care workers with dermatitis reported that they had been told by a health provider that the skin disorder was work-related — about double the rate of other occupations. Overall, the prevalence of work-related dermatitis was about 100-fold higher than the count reported by the U.S. Bureau of Labor Statistics, researchers at the National Institute for Occupational Safety and Health (NIOSH) found.

Yet even that is an understatement of the problem of work-related dermatitis, says **Kenneth Rosenman**, MD, chief of the Division of Occupational and Environmental Medicine at Michigan State University in East Lansing and a national expert on surveillance of occupational injuries and illnesses.

Many people don't talk to their doctors about the work-relatedness of their skin conditions, Rosenman says. In 2011, Michigan conducted a Behavioral Risk Factor Surveillance System survey and asked a question: "Do you think your skin condition was probably work related?"

Adding that question boosted the prevalence of work-related dermatitis by 76%. That means about 16% of health care workers who have dermatitis have a condition that is likely work-related, he says.

This is not just a numbers game, Rosenman emphasizes. By failing to detect cases of occupational dermatitis, employee health professionals lose the opportunity to make corrective changes, he says. "We could better address the work practices or substitute a different cleaning agent," he says.

Better surveillance data also reveals the burden and risks of various industries and occupations. Rosenman has criticized using an employer survey as the sole method of determining federal injury and illness data.

"[The dermatitis research] is just another example that the BLS employer based survey is totally inadequate," he says.

Frequent hand washing damages skin

Healthy People 2020 sets a goal of reducing occupational skin dermatitis by 10%. But that may be a particular challenge in health care because of frequent hand washing and donning and doffing of gloves, says **Marty Visscher**, PhD, director of the skin sciences program at the Cincinnati Children's Hospital.

"If people comply with the hand hygiene guidelines, they're going to have skin damage," she says.

In 2011, the Bureau of Labor Statistics reported that 6.3 out of 10,000 hospital workers have work-related skin disorders, about twice the rate of 3.3 for all workers.

Some parts of the hospital and some occupations have a much higher risk. In the neonatal ICU, for example, Visscher sees employees with erythema on their knuckles, small fissures and cracks on the knuckles and even around the cuticles, and flaking on the palms. "They'll say, 'You should have been here last night. My hands were bleeding into the chart,'" she says.

A 2007 study found that 55% of inpatient nurses and 65% of ICU nurses had observable dermatitis.[2]

The problem often begins with frequent handwashing. Depending on the patient load, a nurse on a 12-hour shift may perform hand hygiene 70 to 200 times, says Visscher. If that includes frequent handwashing, the outer barrier of the skin is compromised, she says.

"Soap wears away some of the structural materials in the top layer of the skin," she says. "That opens up channels for irritation … The number one reason people will give you for not doing hand hygiene is the irritation. It is a factor."

Frequent use of creams can help

Hand sanitizers are designed to enable repetitive hand hygiene without damaging the skin. But if the skin is already damaged, the alcohol-based rubs can cause additional irritation, says Visscher.

"When the skin is damaged enough, it has tiny cracks. When people use alcohol hand rubs, they get stinging and burning," she says. "We can't ignore health care workers when they're saying this hand sanitizer stings."

Intensive treatment with hand creams can reduce irritation and erythema, Visscher found in a study of workers in the NICU at Cincinnati Children's Hospital. The study group used a cream called Remedy, which is free of petroleum and mineral oil, and applied it at least 10 times a day on off days and five times on work days. Workers using the test cream had less erythema than a group using their usual products and a control group.[3]

Visscher advises health care workers to have "proactive use of skin repair" — to put moisturizing cream on their hands frequently throughout the day. Lotion can be provided in break rooms and bathrooms, she says. "If they can carry a hand sanitizer in their pocket, they can carry a small tube of lotion in their pocket," she says.

Lotions or creams should be free of petroleum-based products, such as petrolatum, or petroleum jelly, and mineral oil, because they can compromise the integrity of the gloves, Visscher says. In her study, about 80% of the personal lotions or creams used by health care workers contained petrolatum or mineral oil.

In fact, glove use itself is irritating because of the friction of pulling them on and off and the potential for moisture to build up on the skin beneath the glove, she says.

Nurses and other health professionals may treat their own skin problems with over-the-counter products. Hospitals should encourage health care workers to report skin conditions, says Rosenman.

"There has to be a culture at the health care facility that 'We want to know when you think you're having a work-related problem,'" he says. "Even if you're self-treating, or you're seeing your personal health care provider, we still want to know because we want to see if there's a pattern in the hospital."

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Flu shot mandates must have exemptions

EEOC: Accommodate 'sincere … belief'

Hospitals can get an immediate boost in health care worker vaccination coverage with mandatory influenza immunization policies. But before implementing a mandate, employers must answer an important question: Who will get an exemption?

A mandate without exemptions could be a legal problem, says **Joseph Lynett**, JD, partner in the Disability Leave and Health Management Practice Group at Jackson Lewis law firm in White Plains, NY.

"To have a policy that does not permit exemptions runs a grave risk of violating Title VII [of the Civil Rights Act of 1964], if the employee needs an accommodation for religious reasons, and particularly the ADA [Americans with Disabilities Act] if the employee needs an exemption for medical reasons," he says.

The U.S. Equal Employment Opportunity Commission (EEOC) found that "once an employer receives notice that an employee's sincerely held religious belief, practice, or observance prevents him from taking the influenza vaccine, the employer must provide a reasonable accommodation unless it would pose an undue hardship."

Employers can ask for verification of an employee's "sincerely held religious belief," but cannot require that verification to come from a member of the clergy or congregation, EEOC legal coun-

sel **Peggy R. Mastroianni** said in a December 5, 2012 letter responding to an employee's inquiry.[1] Supporting information for the religious belief "could be provided by others who are aware of the employee's religious belief or practice," the EEOC has said.

The belief does not have to be an established religion. The EEOC notes that "idiosyncratic beliefs can be sincerely held and religious."

For example, in February, an Ohio district court ruled that a vegan had a possible religious discrimination claim after she was fired for refusing a flu vaccine. Cincinnati Children's Hospital Medical Center had turned down her request for a religious exemption.

The EEOC allows employers to require other infection control measures, such as wearing a mask, "if not done for retaliatory or discriminatory reasons."

Lynett also advises unionized hospitals to negotiate with the unions before implementing a mandatory policy.

No egg worries with new vaccines

Employers also need to provide for medical exemptions — but number of exemptions may be decreasing as the changing dynamics of flu vaccines enable even those with egg allergies to receive the vaccine.

"In terms of exemptions based upon medical conditions, the employer shouldn't avoid its obligation under the ADA to enter into the interactive process. That's a discussion and exchange of information with the employee regarding the medical necessity to be exempt from a mandatory flu vaccination requirement," Lynett says.

For the first time, the 2013-2014 flu season will feature two new vaccines that are not grown in eggs — FluBlok, which uses an insect virus and recombinant DNA technology, and Flucelvax, a Novartis vaccine that uses a cell-culture technology. The new technologies allow a swifter response to newly emerging strains because they do not have to be grown in eggs.

"Egg allergy should hardly be an issue any more with influenza vaccine," says **William Schaffner**, MD, chairman of the Department of Preventive Medicine at Vanderbilt University in Nashville, TN, and past president of the National Foundation for Infectious Diseases.

Even the traditional inactivated vaccine may be safe for people who have had only a hive reaction (rather than serious anaphylaxis) in response to eggs, according to the Centers for Disease Control and Prevention. In those cases, the individual should be monitored for at least 30 minutes after vaccination by someone who is familiar with the signs and symptoms of egg allergy and is able to respond and rapidly treat anaphylaxis if it occurs, the CDC says.

Anyone who has ever had a severe allergic reaction to a flu vaccine should not receive future vaccines. People with a history of egg allergy should not receive the nasal vaccine (live attenuated influenza vaccine), according to the CDC.

Having had Guillain-Barre Syndrome with onset six weeks after the influenza vaccine is also a "precaution" against vaccination that should be evaluated by a physician, CDC says.

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Does flu vaccine wane during season?

CDC still advises vaccination by October

Getting an early start on influenza vaccination may not be the best strategy. Three studies from Europe have raised new questions about waning immunity after vaccination — within the same flu season.

The Centers for Disease Control and Prevention does not recommend changing the start date of fall influenza vaccination campaigns, but the agency is seeking more information on the issue of waning immunity and vaccination timing, says **Lisa Grohskopf**, MD, MPH, medical officer with CDC's Influenza Division.

"We don't know when the season is going to start, so we don't know when to tell people to start vaccinating," says Grohskopf, who notes that influenza outbreaks can begin as early as October. "How early is too early and how late is too late depends on the season."

Currently, CDC still recommends starting influenza vaccination "soon after vaccine becomes available, if possible by October."

European researchers have been finding evidence

of waning immunity. For example, a British study found that vaccine effectiveness against H3N2 was 43% for the first four months of the 2011-2012 season (October to January) and just 17% for the final three months of the season.[1]

However, because of the small sample size compared to what is needed for vaccine effectiveness studies, the confidence intervals are large, leaving some uncertainty in the findings, Grohskopf notes. In the British study, the confidence interval for effectiveness early in the season ranges from -34% to 75% and the confidence interval for later in the season ranges from -24% to 45%.

There are other considerations as well. If vaccination starts later, it may be difficult to manage large vaccination programs, whether they are employee-based or public campaigns, says Grohskopf. The Advisory Committee on Immunization Practice, a CDC expert advisory panel, continues to recommend universal vaccination. About 145 million doses were expected to be available this flu season.

"There are concerns that if the programs start later, you miss opportunities to vaccinate," says Grohskopf. "Deferring to later makes it more difficult to get [the vaccination program] done."

Effectiveness low for elderly

Overall, the effectiveness of the flu vaccine has gained more scrutiny. In this flu season, the vaccine was only 47% effective against influenza A strains for people under 65, but 67% effective against influenza B, the CDC reported. The combined effectiveness of the trivalent inactivated vaccine, the most common version, was 56%.[2]

"Certainly, we'd all like to see a better vaccine," Grohskopf says. "Having 50% or 60% [protected] is better than not having any protection."

The vaccine performed even more poorly among the elderly this season. The overall effectiveness of the trivalent inactivated vaccine was 27% for people 65 years of age and older, but the effectiveness was only 9% against the H3N2 strain, which is known to cause more severe disease.

Older people may not mount an adequate immune response, particularly to H3N2, influenza experts say. However, they also have a higher risk of hospitalization and death from complications of influenza and should still be a priority group for vaccination, CDC researchers say.

In the 2013-2014 flu season, an unprecedented number of types of vaccines will be available, including two that use a new, non-egg-based technology. *(See related article on p. 40.)* ACIP, the federal advisory panel, approved the use of a quadravalent vaccine, which will protect against two A strains and two B strains. The trivalent vaccine protects against two circulating A strains and one B strain.

Fluzone, a high-dose inactivated influenza vaccine, was approved by the U.S. Food and Drug Administration for people 65 and older. However, the CDC has not stated a preference for particular types of flu vaccine for different populations.

"The messages are going to be more complicated next year than ever," says **William Schaffner**, MD, chairman of the Department of Preventive Medicine at Vanderbilt University in Nashville, TN, and past president of the National Foundation for Infectious Diseases.

People receiving the trivalent vaccine should not consider it to be inferior to the quadravalent vaccine, he says. More research is needed to determine which vaccines are more effective for different age groups and patient populations, he says.

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■

Finally — there's an app for safety!

Occ health enters the mobile world

It's time to liberate yourself from pencil, paper and PC. For a growing number of employee health tasks, you'll be able to say: There's an app for that.

Mobile applications for the smartphone or tablet are becoming more common in occupational health, for everything from ergonomic reminders to monitoring fatigue and hand hygiene. Several apps allow you to use customized audit forms or checklists and transmit the information to a web-based reporting system.

App-based systems are becoming more popular as mobile devices become integrated into our daily lives, says **Jonathan Brun**, co-founder of Nimonik in Montreal, which has an environmental, health and safety audit tool.

"People who grew up with the Internet say it's crazy to use pencil and paper. Let's use technology," Brun says. "As the managers themselves are changing, they're bringing on board the technology they use at home and that their kids use."

The U.S. Department of Labor recently sponsored a "Worker Safety and Health App Challenge" and named four winners and 20 finalists. The winners, chosen by a panel that included Adam Savage and Jamie Hyneman of the Discovery Channel show "Mythbusters," won prizes ranging from $15,000 to $3,000.

"Our challenge in particular was focused on young workers and trying to get information out to them," says **Amanda Edens**, MPH, director of the Directorate of Technical Support and Emergency Management for the U.S. Occupational Safety and Health Administration (OSHA). "Research would suggest that young workers don't go to web pages as much as they use mobile technology."

Apps can be developed for safety and health professionals or for the employees themselves, she says. "Ultimately, our goal is to get information in their hands the best way possible," she says.

Answers at your fingertips

Sidharth Garg, a data specialist in Austin, TX, won the "People's Choice" award for his office ergonomics app. He got the idea after working at a company that used a PC-based ergonomics reminder.

"It would lock down your computer every 30 or 40 minutes and encourage you to take a stretch break," he says. "For a lot of people, I think that's very helpful, but if you're in the middle of working on something and you're in the zone, it can be really frustrating."

Garg's app provides optional reminder tone on an iPhone and also provides information about stretching and office ergonomics.

The Veterans Health Administration is working on an app that would help bedside caregivers assess patient mobility and patient handling needs, using the VA scoring system and algorithms.

Workers with other ergonomics hazards — in areas such as environmental services, laundry, maintenance and food services — can use an app to calculate the maximum weight they can safely lift without assistance, according to the NIOSH lifting index. (*For a list of apps, see story below.*)

Apps also provide a way to make safety information easily accessible for remote workers, such as home health workers, says **Deborah Fell-Carlson**, RN, MSPH, COHN-S, policyholder safety and wellness adviser for SAIF Corporation, a non-profit workers' compensation insurer based in Eugene, OR.

"They're out on their own. They don't have any way to get information. That is a gap we're trying to close," she says. ■

An occ health look at the app store

Apps, or applications for mobile devices and smartphones, are just emerging in the occupational safety and health arena. In fact, the U.S. Occupational Safety and Health Administration (OSHA) is seeking suggestions for future apps or web-based products that would benefit health care workers. (*Email your ideas to Assistant Secretary of Labor for Occupational Safety and Health Dr. David Michaels at* PublicMichaelsDavid@dol.gov.)

Most apps have been created for Apple products, but Android versions are also under development. Here are some apps that are currently available and applicable to the hospital employee health environment:

Ergonomics iOS: Office workers can get a break with this app that guides them through stretches and even provides optional stretch reminders. The app also includes tips on the proper setup of a computer monitor, keyboard, desk and chair.

Available for: iPhone, iTouch, iPad. Free.
www.enterpriseergo.com/

ErgoMinder: Set your iPhone to provide a reminder to stretch or take a break. This is designed for office workers.

Available for: iPhone, iTouch, iPad. $.99.
http://www.animath.com/p/ergominder/

Lifting calculator: This app was developed by Oregon OSHA to help workers calculate the maximum safe lift, based on the NIOSH lifting equation. It includes questions about body position, frequency of lifting and twisting motions to determine the maximum weight.

Available for: Android, web. Free.
http://www.cbs.state.or.us/osha/apps/liftcalc/

lifting-calc-options.html

NIOSH Lifting Index: Safety professionals can use this app to calculate the NIOSH lift index. It condenses the NIOSH equations and descriptions into a single screen.

Available for: iPhone, iTouch, iPad. $2.99.

http://digitaldawg.com/dawghouse/liftindex.html

EHS Audit: Go paperless as you conduct a safety audit or use a checklist. This app enables you to take photos, video or audio along with your notes and data. You can export your information to PDF, Word or Excel documents.

Available for: iPhone, iTouch, iPad. $29.99 for a single user and single audit. Starting at $49 per month for a web-based system with multiple users.

http://www.nimonik.ca/products/environmental-health-safety-quality-audit-inspection-ipad-iphone/

iAuditor: Developed by an Australian company that provides occupational health and safety consulting, this app allows safety professionals to conduct audits and use checklists on a mobile device. The forms can be customized and exported into a pdf document.

Available for: iPhone, iPad. Free.

https://store.safetyculture.com.au/iauditor/

iJSA: Conduct a job safety analysis, take photos and complete a risk assessment without pen and paper. Export the results in a pdf that can be emailed or printed.

Available for: iPhone, iPad. Free.

http://store.safetyculture.com.au/iJSA/

Fatigue Calculator: This app uses information about sleep in the past two days, how long a person will be awake, and the start time of their shift to calculate and display the time periods of low, moderate, high and extreme fatigue. This can be a standalone app to improve employee awareness about fatigue or the information can be transmitted to a fatigue manager to trigger fatigue management measures.

Available for: iPhone, iTouch, iPad, and Windows. You must purchase usernames and passwords before downloading the app from iTunes. $24.95 for the standalone version, $49.95 for the fatigue manager.

www.fatiguecalculator.com.au/PRODUCTS-SERVICES/Products/Products.asp

Wiser: Wireless Information System for Emergency Responders, developed by the National Library of Medicine, provides information on chemical, biologic and radiologic agents to help emergency responders in hazardous material incidents. The app is designed to help emergency responders identify hazardous substances based on symptoms and physical properties.

Available for: iPhone, iTouch, iPad, Blackberry, Android, Palm OS and Windows. Free.

http://wiser.nlm.nih.gov/about.html

CDC Influenza: This app, developed by the Centers for Disease Control and Prevention, provides easy access to updated influenza recommendations and influenza activity.

Available for: iPhone, iTouch, iPad. Free.

http://www.cdc.gov/flu/apps/cdc-influenza-hcp.html

USW Chemical Safety: Search the NIOSH Pocket Guide to Chemical Hazards or access a database of Material Safety Data Sheets. Provides information on exposure limits, health hazards, workplace controls, personal protective equipment, handling and storage, and emergency information.

Available for: iPhone, iTouch, iPad. Free.

https://itunes.apple.com/app/usw-safety/id327458795?mt=8

iScrub: Who has the best hand hygiene compliance – physicians, nurses or techs? Which units need more education and awareness? This app can answer those questions. Developed at the University of Iowa, iScrub walks the user through hand hygiene observations. You can email observation files for further analysis.

Available for: iPhone, iTouch, iPad. Free.

http://compepi.cs.uiowa.edu/iscrub/ ■

Return-to-work barriers may be a matter of 'time'

Depression, sleep apnea may delay recovery

When it comes to boosting return-to-work success after occupational injuries, sometimes more is more.

Taking extra time to determine underlying causes of continued discomfort or pain from an occupational injury results in better outcomes, says **Jonathan Torres**, MD, MPH, medical director of the WorkMed Occupational Health Services at St. Mary's Health System in Auburn, ME.

"If we can prevent even a small number of people who go on long-term disability, it's a huge benefit," says Torres, who is scheduled to speak at the upcom-

ing conference of the American College of Occupational and Environmental Medicine (www.acoem.org/aohc2013_conference.aspx). "There's a window of opportunity for us to intervene at the proper time."

Too often, in the initial treatment of occupational injuries such as back pain, providers take a narrow view of the problem and focus on purely the medical condition, he says. Then more money and resources may be spent later in care, when the chances of full recovery are low, he says.

"We [occupational medicine providers] see people and if they're not getting better, we tend to over-medicalize and refer out to other providers. We may not realize what's causing their lack of improvement," he says. "There may have been an important issue that wasn't addressed early on."

Torres conducts an in-depth evaluation of patients who haven't improved significantly a month after their injury.

He demonstrated success with comprehensive evaluations — lasting about an hour and a half — of low injury back patients who hadn't returned to work within one to three months after injury. He compared 100 low back injury patients before implementing the new protocol and 100 patients who received the tailored intervention.

Torres relies on a model known as SPICE (Simplicity, Proximity, Immediacy, Centrality, and Expectancy). Based on a program developed by the military, SPICE is a comprehensive approach to reducing the incidence and costs of occupational injuries. It involves building morale and support for employees, handling claims swiftly and keeping a central focus and expectation on return to work. If employees don't recover as expected, Torres uses tailored disability prevention evaluations.

"We found the number of days they were treated in our office was less after implementing this program," says Torres, who noted that injured employees also had fewer days away from work. The data have not yet been published.

Consider psychosocial factors

Psychosocial issues play a key role in recovery, says Torres. He keeps that in mind from the very first visit with an employee.

For example, a nursing assistant with first-time back pain may feel anxious. If the diagnosis is mild muscle strain, Torres emphasizes the positive prognosis: "We think you have a mild muscle strain. It's hurting a lot now, but within a few days you're going to feel a lot better."

If symptoms have not improved significantly within four weeks, Torres uses common screening tools for depression and sleep apnea, conditions that can worsen pain or delay recovery. More importantly, Torres takes a more complete history, with questions about factors at work and at home that may be taking an emotional or physical toll.

"They're not getting better and there's a reason for that," he says. "I can't tell you how many times I'll get to the source of the delayed recovery that would not have been identified. It's been an eye-opener for me."

Severe back injuries may require surgery and prolonged pain and discomfort is not uncommon, Torres notes. But delayed return-to-work often occurs with more moderate injuries, as well.

"Depression is one of the most underdiagnosed conditions in an outpatient practice," says Torres. "If someone has a musculoskeletal condition but they have depression that's untreated or undertreated, this may be an important reason why they are not getting better. They can have higher pain levels because of the depression and be less motivated to carry through with treatment recommendations."

Torres also helps patients with anxiety about returning to work by arranging for a simulation of their work tasks. The employee can then see that they can safely perform their job duties.

Process benefits employees

Other medical and even personal factors can influence return to work. Are there stressors at home that impact recovery? Are other factors leading to a loss of restorative sleep or are other, undiagnosed medical conditions interfering with recovery?

In one case, Torres recalls an employee who was worried about child care and getting his children to school if he returned to work in the first shift. "In the team meeting, the employer was willing to accommodate restructuring return to work," he says.

The workers' compensation costs can be huge in cases of long-term disability. But the implications for individual workers are also grave. Employees who never return to work have a permanent reduction in their income and may struggle to maintain their homes and pay bills.

Delayed return to work also takes a physical toll, says Torres. "Disconnection with the workplace is not healthy," he says. "It's a huge risk factor for people in terms of health if they're not able to work any longer. If we can make a small difference to prevent long-term disability, we're making a huge impact in their lives." ■

Upbeat approach helps with low-back pain

Communication is key in return-to-work

Good communication is the key to promote successful return-to-work among employees with low-back pain, says **Denise Knoblauch**, BSN, RN, COHN-S/CM, clinical case manager at OSF Saint Francis Medical Center in Peoria, IL.

To make sure the message and support remain consistent among patients, Saint Francis developed a low-back pain protocol, which is based on the low-back pain guidelines of the American College of Occupational and Environmental Medicine (ACOEM). The goal: Return to full duty within 28 days for at least 75% of the employees suffering from low-back pain.

To develop the protocol, Knoblauch and her colleagues began by bringing together a task force that included advanced practice nurses, case managers, and an exercise specialist. They conducted root cause analysis to better understand the hazards.

Through the safe patient handling program, Saint Francis is trying to eliminate some of the causes of injury, says Knoblauch. "We hired a consultant to help with education and follow-up," she says. "They analyze patient handling injuries to see if they were preventable."

They discovered that some injuries occurred when employees didn't use the available equipment. For example, patient care techs would roll over an obese patient to change the linens without realizing that it was a high-risk task.

After an injury occurs, Knoblauch and her colleagues work hard to keep employees on track and to give them a positive framework for recovery. Coping skills begin with optimism, she says. The nurses are scripted to tell employees from the first visit, "Yes, you're going to be hurting today, but in two days it's going to get better," she says.

The visit with an injured employee occurs within the first week — or within one or two days, if the employee is unable to work. A nurse provides information about the use of heat and cold, medications, stretching and movement, and physical therapy, if appropriate.

Nurses set positive expectations: "Remember by following these instructions you will be able to resolve back pain faster. We expect back strains to resolve within about 10 days."

The second visit occurs at about 10 to 14 days post-injury, with an assessment of exercise, medication, therapy and work restrictions. (At either visit, radiographs may be necessary, based on the course of the injury.)

More encouragement is forthcoming: "We don't want you to give up what you have gained. We really want to see this resolve for you within the next week."

The third and four re-checks, at 20 to 21 and 27 to 28 days, nurses and case managers remind the employees to continue the lifestyle changes: "Remember, don't give up your exercises and all the gains you've made with those. We see most back pains go back to regular duties within 28 days when they follow this plan. Keep doing everything you are doing."

If recovery is delayed, they also assess for psychosocial factors that can add to pain and impairment. (*See related article on p.44.*) Injured employees who have a confounding diagnosis, such as infection, tumor, fracture or dislocation, do not follow this protocol.

"Our advance practice nurses are good communicators," says Knoblauch, who notes that they also monitor patients to make sure they keep on schedule with their follow-up visits. ■

Pertussis boosters on tap for HCWs?

Immunity wanes in a few years

Pertussis outbreaks have continued despite a push to provide booster vaccines for adolescents and adults. The Centers for Disease Control and Prevention is now considering whether additional boosters may be needed, including for health care workers.

In 2012, there were more than 41,000 reported cases of pertussis and 18 pertussis-related deaths in the United States, mostly among infants younger than 3 months. Every state except California saw an increase in pertussis cases. *(California had an outbreak that peaked in 2010 and continued into 2011.)*[1]

Because of underreporting, the burden of pertussis is likely much greater than reflected in those numbers, **Thomas Clark**, MD, MPH, medical epidemiologist told the Advisory Committee for Immunization Practices (ACIP), a federal

advisory panel. "We expect the resurgence of pertussis to continue," he says.

One major problem: Immunity begins to wane just a few years after immunization with the acellular vaccine. In 2012, there was a resurgence of disease even among older children. Children receive the last of five diphtheria, tetanus and pertussis (DTaP) doses between the ages of 4 and 6. Last year, there was a spike in cases among children ages 10, 13 and 14.

"The switch to acellular vaccine may have changed the epidemiology of the disease," Clark says.

In 1997, CDC recommended only acellular vaccines for the five-dose series because of safety concerns with the whole-cell vaccine. Now, there is new consideration of "priming" infants with one dose of the whole-cell vaccine.[2]

Meanwhile, in June, ACIP may consider recommendations for additional booster doses of Tdap, the adult acellular vaccine. They could add a single booster for older adolescents or young adults, or boosters every 10 years.

ACIP also could consider a different recommendation for health care workers, although Clark notes that "we don't have evidence that health care workers are important in the spread of pertussis. Most babies get pertussis in their homes." CDC currently recommends a single booster of Tdap for health care workers.

CDC is unlikely to change the post-exposure recommendations for health care workers, says Clark. CDC recommends post-exposure prophylactic antibiotics for all health care workers (vaccinated or unvaccinated) who could have contact with high-risk groups, such as infants and pregnant women. Other exposed health care workers should either receive prophylaxis or should be monitored for 21 days for signs and symptoms of pertussis.3

"There's an indication that post-exposure prophylaxis does have a benefit [in preventing disease]," says Clark.

Yet vaccination continues to be the more important infection control measure, he says. "[Post-exposure prophylaxis] can protect individuals, but there's not any evidence it can stop an outbreak," he says.

REFERENCES

1. Liko J, Robison SG, and Cieslak PR. Letter: Priming with whole-cell versus acellular pertussis vaccine. *New Eng Jrl Med* 2013; 368:581-582.
2. Centers for Disease Control and Prevention. Immunization of healthcare personnel: Recommendations of the Advisory Committee on Immunization Practices. *MMWR* 2011; 60:1-45 ■

CNE INSTRUCTIONS

Nurses participate in this CNE/ CME program and earn credit for this activity by following these instructions.

1. Read and study the activity, using the provided references for further research.
2. Log on to **www.cmecity.com** to take a post-test; tests can be taken after each issue or collectively at the end of the semester. *First-time users will have to register on the site using the 8-digit subscriber number printed on their mailing label, invoice or renewal notice.*
3. 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%.
4. 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.
5. Once the completed evaluation is received, a credit letter will be e-mailed to you instantly. ■

CNE OBJECTIVES

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

- identify particular clinical, administrative, or regulatory issues related to the care of hospital employees;
- describe how 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

- Helping nurses cope with stressors
- A team approach to boosting wellness
- Lessons from probe of CA lab fatality
- HBV provider-to-patient transmission raises concerns
- CDC updates management of HBV-positive HCWs

CNE QUESTIONS

1. What three types of injury will be included in the new Occupational Health and Safety Network surveillance system?
   A. Needlesticks, musculoskeletal disorders, TB
   B. Back strain, shoulder injury and infectious diseases
   C. Slips and falls, patient handling injuries, and workplace violence
   D. Respiratory disorders, skin disorders, bloodborne diseases

2. According to **Marty Visscher**, PhD, director of the skin sciences program at the Cincinnati Children's Hospital, what can health care workers do to protect their hands from work-related dermatitis?
   A. Minimize hand hygiene opportunities.
   B. Use moisturizing cream frequently throughout the day.
   C. Switch to nitrile gloves.
   D. Wash with water and soap instead of using hand gel.

3. According to the Equal Employment Opportunity Commission (EEOC), under what circumstance can an employee receive a religious exemption from influenza vaccination?
   A. If the employee has a "sincerely held belief" and the exemption is not an undue hardship.
   B. If the employee has a long-held belief and verification from a clergy member.
   C. If the employee demonstrates that his or her religion prohibits vaccination.
   D. Employers are not required to provide exemptions for religious beliefs.

4. Three European studies have raised concerns about waning effectiveness of the flu vaccine during the influenza season. What does the Centers for Disease Control and Prevention recommend regarding the start of influenza vaccination?
   A. Start influenza vaccination as soon as vaccine becomes available, preferably by October.
   B. Start influenza campaigns no earlier than October.
   C. Delay vaccination until the first cases of influenza appear in the community.
   D. Stagger influenza vaccination throughout the flu season.