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AHC Media

As pandemic threats emerge, will better respirators be ready?

'The best respirator ever — if it's not used — is not going to help the worker.'

A patient with influenza coughs. Viral particles fly across the room and linger in the air. A health care worker walks into the room and breathes in the invisible contaminant.

That scenario illustrates some of the concerns about transmission of influenza and the challenge of protecting health care workers. With an eye on the possibility of a new influenza pandemic — and a new SARS-like virus emerging in the Mideast — researchers and safety experts recently met in Atlanta to discuss respiratory protection in health care.

They acknowledged gaps — in knowledge of disease transmission, in the comfort of respirators, and in the compliance of health care workers.

"We have a lot of unknowns in health care that need to be addressed," said **Maryann M. D'Alessandro**, PhD, associate director for science at the National Personal Protective Technology Lab (NPPTL) of the National Institute for Occu-

MERS update: Use N95s

The Centers for Disease Control and Prevention recommends standard, contact and airborne precautions when caring for hospitalized patients with known or suspected Middle East Respiratory Syndrome Coronavirus (MERS-CoV). That means health care workers should wear gloves, gowns, goggles or face shields, and respiratory protection at least as protective as an N95 respirator when they enter a patient room or care area, CDC says. Patients should be placed in an airborne infection isolation room and should wear a face mask when they are not in an airborne infection isolation room. CDC suggests evaluating anyone who develops severe acute respiratory illness that is not explained by some other cause if they have traveled to the Arabian Peninsula or neighboring countries or had close contact with someone who traveled to that region within 14 days. Information updates are available at www.cdc.gov/coronavirus/mers/index.html. ■

pational Safety and Health, at a stakeholder meeting.

"A lot of research is dedicated to [learning about transmission of respiratory diseases] and the answers are still not there," she said.

Yet progress is being made toward improving respirators. Manufacturers are developing prototypes of respirators designed to be more comfortable for health care workers. NIOSH is moving forward with a "total inward leakage" rule that will add fit as a criterion for respirator certification. And researchers are developing elements and test methods that could be the basis for a B95 respirator — to specifically protect against biologics.

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"Health care is a unique environment with different challenges," said **Ron Shaffer**, PhD, senior scientist with NPPTL. "You really need to have a respirator designed specifically for health care."

Gap in compliance

NIOSH has typically hosted a stakeholders' meeting on respiratory protection that addresses several major industries. But the agenda of this health care-only meeting revealed some of the specific concerns in the hospital setting, where a pandemic could require employees to wear a respirator for hours at a time.

It was a good news-bad news report. N95 filtering facepiece respirators are highly protective, said **William Lindsley**, PhD, a NIOSH research biomedical engineer. "If you're wearing an N95 and it fits right, virtually nothing is going to get through that," he said.

But often, health care workers don't know when or why they need to use respirators — or how to use them properly, said **Kristina Peterson**, director of the occupational safety and health program at RTI International in Research Triangle Park, NC.

"The biggest gap and the lowest rates of adherence involved aerosol-generating procedures with patients who have seasonal influenza," said Peterson, who reported on the REACH II study that involved interviews with 1,105 health care workers and 260 managers at 98 hospitals in six states.

The Centers for Disease Control and Prevention advises health care workers to wear a face mask for routine care of patients with seasonal influenza (droplet precautions) but calls for an N95 or greater protection when performing aerosol-generating procedures.

CDC recommends airborne precautions (gowns, gloves, eye protection and respiratory protection of an N95 or greater) when caring for patients with suspected or confirmed novel Middle East Respiratory Syndrome (MERS-CoV) or H7N9 influenza. (As of mid-July, neither disease had been detected in the United States.)

Donning and doffing the respirator is also a problem, Peterson said. Health care workers are especially lax about user seal checks, which are supposed to occur every time a respirator is worn, and proper removal of respirators, she said. Respiratory protection programs need better monitoring and evaluation, she said.

"Our conclusions are that all hospital staff need to have more information about a number of topics," including transmission risk, airborne precautions and proper respirator use, she said.

Cough plume spews airborne influenza

'Super-spreaders' release the most

Just what is the risk of transmission from a coughing patient with influenza? Researchers still can't answer that question definitively, but airborne particles appear to play a greater role than previously believed.

Werner Bischoff, MD, PhD, FSHEA, an epidemiologist at Wake Forest Baptist Medical Center in Winston Salem, NC, conducted air sampling in the emergency department and inpatient units around 61 patients with confirmed influenza. He detected aerosolized influenza around 26 of the patients — but five of them were "super-spreaders."

"The higher your nasopharyngeal viral load, the more likely you were to spread influenza into the environment," he said. "There were five that were spreading exceptionally high amounts of influenza into the environment."

Bischoff also notes that the distinction between droplets and aerosol particles may not be relevant. "Everyone is emitting a wide range of particle sizes," he says.

Lindsley used air sampling in a hospital emergency department and urgent care clinic. "We detected flu in every location we monitored," he said. "We found it throughout the clinic."

Many of the particles were less than four microns in size, he said. "These are particles that can stay airborne for a long time, they're easy to inhale and they're respirable — they can get down deeper in the lung," he said, though he noted that it wasn't possible to determine if the small particles were infectious or what the infectious dose would be.

Lindsley also sampled the air around 47 coughing patients with influenza. He found that 84% spread flu aerosols — but 39% of all the influenza RNA detected came from just three patients. "Some patients may be much, much better at spreading influenza around than others are," he said.

Tests with a coughing machine also revealed what happens to the plume. "No matter where you are in that room, within five minutes, you're exposed to that coughing plume," he said.

These findings may point to another important protection for workers, researchers said — putting a mask on coughing patients as source control. ■

A better-fitting respirator

Fit-testing has been another troublesome area for hospitals, but employee health professionals may find greater success with fit-testing once NIOSH adds fit as a criterion. The proposed total inward leakage rule, first released in 2009, is being revised based on comments from stakeholders and further scientific research, said D'Alessandro.

The rule would set a strict limit for how much of an air contaminant could penetrate a respirator — both through the filter and face seal. The goal is to have N95 filtering facepiece respirators that fit better right out of the box — which would mean fewer failures in fit-testing, safety experts say.

NIOSH has scheduled a stakeholders' meeting on September 17 in Pittsburgh to discuss changes in the proposed rule, which largely relate to the human test panels used to determine fit, D'Alessandro said.

Meanwhile, NIOSH is trying to determine a set of tests that could be used to certify a specific B95 half-mask filtering facepiece respirator for health care. They would likely include comfort-related issues such as breathing resistance and facial heat, says Shaffer.

But a proposed B95 rule is still well in the future, Shaffer and other NIOSH researchers acknowledged. "We need more data, and we need to be able to prove we can produce a better respirator," said **Ziqing Zhuang**, PhD, acting branch chief of the NPPTL Research Branch.

NIOSH also is considering a health care version of the powered air-purifying respirator (PAPR), which would be light-weight, less noisy and more comfortable.

In addition, two manufacturers say they have made progress toward a prototype of a better N95. One innovation: New respirators may be made of different materials.

"Higher performance filter media will help allow us to reduce respirator thickness, weight and pressure drop, increase comfort and service life, and expand our design options," **Lauri Alvarez**, senior technical service engineer at 3M in St. Paul, MN, said at a meeting sponsored by the National Personal Protective Technology Lab (NPPTL) of the National Institute for Occupational Safety and Health.

Scott Safety of Monroe, NC, has experimented with design changes that make it easier for health care workers to remove a respirator without contaminating their hands and would enable respirators to be reused.

Georgia Institute of Technology also is experimenting with a form-fitting device that would not need to be fit-tested.

The new respirator design emerged from Project BREATHE (Better Respiratory Equipment using Advanced Technologies for Healthcare Employees), which was initiated by the Veterans Health Administration.

A better respirator for health care will need to be accompanied by an awareness and education campaign to encourage the proper use, Shaffer said.

"Even if we build the best respirator ever, if it's not used it's still not going to help the worker in reducing their exposure," he said.

[*Editor's note: More information about the NPPTL meeting is available at* www.cdc.gov/niosh/npptl/resources/certpgmspt/meetings/06182013/HealthcareInvitationLttr06182013.html.] ■

H7N9 flu still poses a pandemic threat

'More likely than other avian viruses to adapt.'

Even as transmission of H7N9 avian influenza subsided in China this spring, the Centers for Disease Control and Prevention remains at heightened concern over the potential for a new pandemic. Development of an H7N9 vaccine for clinical trials and possible stockpiling is already underway.

While acknowledging that pandemic prediction is extremely difficult, some of the nation's top virologists recently acknowledged that "H7N9 might arguably be more likely than other avian viruses to become human adapted."[1]

If so, the next global flu pandemic may be emerging in China, but they also added this hopeful counterpoint: "In 94 years of virologic surveillance, we have never seen a poultry-adapted influenza virus [i.e., H7N9] cause widespread human transmission."

As of June 20, CDC had tested samples from 67 suspect H7N9 cases in the United States; all were negative. CDC continued to urge health care providers to send respiratory specimens from suspect cases to the local or state health department — if there is severe acute respiratory infection that requires hospitalization and recent travel to China or contact with confirmed cases.

The threat of H7N9 emerged rather suddenly this spring when China notified the World Health Organization of three cases of human infection with avian influenza H7N9. By late June, there had been 132 lab-confirmed cases in China and 37 deaths, or a fatality rate of about 30%.In addition, concern is growing about H7N9 strains that are resistant to flu antivirals, meaning treatment options are few in the absence of vaccine. Severe illness occurred most often in older men with underlying health conditions. In fact, almost three out of four (72%) of the H7N9 patients were men. More than half of the patients were 60 or older. Researchers do not know why the disease has been found most frequently in older men, says **Daniel Jernigan**, MD, MPH, deputy director of CDC's influenza division.

"There's something different about this virus, and that's one reason that many people are very concerned about it," Jernigan told an advisory panel of vaccine experts, the Advisory Committee on Immunization Practices (ACIP).

Most cases involved exposure to live poultry. There have been five lab-confirmed clusters, but "it's difficult to know if there's human-to-human transmission," Jernigan said.

Existing immunity? None

Genetic sequencing of the virus showed that it has become more capable of binding to mammalian respiratory cells and replicating in those cells, he said. If H7N9 reemerges this fall, it could be problematic. "There does not appear to be any existing immunity in the U.S. population," said Jernigan.

Jernigan noted that the 132 confirmed cases occurred in just three months of the initial detection of H7N9 in China. (One of those cases was in Taiwan.) There have been just four small clusters that suggest human-to-human transmission. By contrast, H5N1 avian influenza emerged slowly, with just 18 cases in 1997 and a reemergence of human transmission in 2003.

Poultry infected with H5N1 become sick and often die, so ill flocks become a marker for transmission of disease. But poultry do not show signs of illness with H7N9. "We really can't monitor it very well in animals because they don't manifest disease," says Jernigan. And farmers have little incentive to test their flocks.

"Numerous factors cause [H7N9] to be concerning," he says.

Because so far most cases of H7N9 have involved severe disease, the CDC is targeting its surveillance on hospitalized patients with recent travel to China or exposure history.

Health care providers should test "only patients with an appropriate exposure history and severe respiratory illness requiring hospitalization," CDC said in a health advisory. Only confirmed and probable cases of human infection with H7N9 should be reported to CDC, the

agency said.

Patients should be tested if they meet the criteria for both clinical illness and exposure, CDC said. Clinical illness is defined as patients with new-onset severe acute respiratory infection that requires hospitalization for which no alternative infectious etiology has been identified. Patients meet exposure criteria if they have traveled to an area where there have been human cases of H7N9 or where the avian influenza is known to be circulating in animals, or if they have had close contact with confirmed cases of H7N9.

In suspected cases, respiratory specimens should be sent to the local or state health department for testing, CDC said.

The infection control guidance for caring for patients with H7N9 including wearing an N95 (or more protective) respirator, eye protection, gown and gloves when entering a patient room. Updated information about H7N9 is available at www.cdc.gov/flu/avianflu/h7n9-virus.htm.

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New vaccine safe for egg allergic

More choices than ever for flu shots

Egg allergy should no longer prevent someone from receiving the seasonal influenza vaccine. A recombinant flu vaccine (Flublok by Protein Sciences Corp.) that is not produced with eggs will be available this fall for people between the ages of 18 and 49.

The Centers for Disease Control and Prevention has advised health care providers that they can vaccinate people who have only a hives reaction to eggs with the traditional influenza vaccine if they are medically observed for a half-hour after administration. People who have had an anaphylactic reaction or who have never been exposed to eggs but are suspected of having an egg allergy due to allergy testing should consult with a physician before being vaccinated, the CDC said.

However, vaccination with Flublok, also known as RIV3, is now an alternative for people with any type of egg allergy. Produced using insect cells and recombinant DNA technology, it is provided in single-dose vials and has a shelf life of only 16 weeks after manufacture. CDC advises health care providers to check the expiration date before using the product.

Flublok is just one of an unprecedented variety of influenza vaccines that will be available this season. In June, the Advisory Committee on Immunization Practices (ACIP), an expert panel that advises CDC, approved the use of quadrivalent vaccines, which protect against two influenza A strains and two influenza B strains. (The trivalent vaccines target only one B strain.)

Fluzone by Sanofi Pasteur is available as an intradermal vaccine, with a tiny needle, and in a high-dose version, with four times the usual amount of antigen, geared toward people 65 years and older. The high-dose version produces a better immune response in older adults, but it's not clear yet whether that equates to greater protection, CDC says.

Flucelvax by Novartis is produced in a mammalian cell culture, but because the seed used to initiate production was egg-based, it is not considered to be completely egg-free. A Novartis representative told ACIP that no egg protein can be detected in the vaccine.

The quadrivalent vaccine also is available as a nasal spray — FluMist by MedImmune, which is a live attenuated vaccine that is approved for people ages 2 to 49.

Despite the range of products, vaccine effectiveness remains a concern. The 2012-2013 flu season began earlier than usual and peaked in late December. CDC reported 152 influenza-related pediatric deaths, more than any year since 1997, except for the 2009 H1N1 pandemic.

But the main tool for preventing influenza transmission was only 52% effective, reported **Mark Thompson**, PhD, an epidemiologist in the influenza division. It was especially problematic against influenza A (H3N2), with an effectiveness of 19% for people 65 and older and 40% for people 18 to 49.

There were some bright spots for the vaccine. It reduced the risk of outpatient medical visits due to influenza A (H3N2) by 44% for everyone but children ages 9 to 17 and people 65 and older, and it reduced medical visits due to influenza B by 62% for people of all ages. CDC also reported that it reduced the risk of hospitalization.

"The vaccine may have reduced the likelihood of more severe illness," Thompson said. ■

ANA standards seek to raise bar on SPH

A basis for future federal legislation?

New patient handling standards from the American Nurses Association provide the

first comprehensive guidelines that apply to all health care facilities.

They also will form the foundation of a new effort to pass a federal safe patient handling law, says **Suzy Harrington**, DNP, RN, MCHES, director of health, safety and wellness for the ANA, which is based in Silver Spring, MD. Ten states have laws related to safe patient handling.

This push for safe patient handling is especially important because of the serious injuries that continue to occur each year from patient handling, said ANA President **Karen Daley**, PhD, RN, FAAN. In 2011, 25,000 nursing assistants and 12,000 nurses had work-related musculoskeletal disorders that required days away from work, according to the Bureau of Labor Statistics.

"We can't afford these losses and still meet the rising demands for health care services," she said. "We

SPH standards: Create a culture of safety

The Interprofessional Standards of Safe Patient Handling and Mobility released by the American Nurses Association include background on patient handling injuries, lifting limits and the need for technology. Each standard has a section for the employer and for health care workers, for example:

Standard 1. Establish a Culture of Safety

The employer and healthcare workers partner to establish a culture of safety that encompasses the core values and behaviors resulting from a collective and sustained commitment by organizational leadership, managers, healthcare workers, and ancillary/support staff to emphasize safety over competing goals.

Employer

1.1.1 Establish a statement of commitment to a culture of safety

Organizational policy will include a written commitment to a culture of safety that will be used to guide the organization's priorities, resource allocation, policies, and procedures. The written statement regarding SPHM will describe layers of accountability across sectors and settings.

1.1.2 Establish a non-punitive environment

Organizational policy will support a system to encourage healthcare workers to report hazards, errors, incidents, and accidents, so that the precursors to SPHM errors can be better understood and organizational issues can be changed to prevent future incidents and injuries. Healthcare workers know that they are accountable for their actions, but will not be held accountable for problems within the system or environment that are beyond their control.

1.1.3 Provide a system for right of refusal

Organizational policy will provide the healthcare worker the right to accept, reject, or object to any healthcare recipient transfer, repositioning, or mobility assignment that puts the healthcare recipient or the healthcare worker at risk for injury. The refusal shall be made in writing, without fear of retribution. The policy will describe steps for resolving the hazard.

1.1.4 Provide safe levels of staffing

An evidence-based system will be used to determine safe and appropriate caseloads. Adequate staffing levels will support safe patient handling and mobility, including allocated time for training and education.

1.1.5 Establish a system for communication and collaboration

Collaboration among all sectors and settings is critical. The organization will utilize a variety of communication systems to inform and engage the healthcare workers and healthcare recipients about SPHM.

1.2 Healthcare Worker

1.2.1 Participate in creating and maintaining a culture of safety

The healthcare worker will actively participate in creating and maintaining a culture of safety.

1.2.2 Notify the employer of hazards, incidents, near misses, and accidents

The healthcare worker will notify the employer of hazards, near misses, incidents, and accidents related to SPHM as soon as possible, using the reporting procedures defined by the employer.

1.2.3 Use the system to communicate and collaborate

The healthcare worker will engage, verbally and in writing, with others about SPHM.

Considerations for Community Settings

The community setting provides unique challenges for the correction of hazards. For example, in home health, the healthcare worker is a guest in the home, and the healthcare recipient is typically financially responsible for the environment of care. Hazardous conditions, broken or inappropriate technology, or unreasonable requests must be discussed with the healthcare recipient and reported to the employer. The employer is ultimately responsible for the health of employees and can determine if engineering or other controls are available to correct the hazards, or determine that care cannot be safely provided. ■

aim to make those a thing of the past."

The ANA seeks to eliminate manual handling, and the standards note that "[b]ased on available evidence, manual handling is unsafe in almost every situation. Safe patient handling and mobility technology and methods must be used to lift, laterally transfer, or reposition dependent healthcare recipients."

The voluntary standards outline responsibilities of both employers and health care workers in eight different areas that encompass incident reporting, purchase and use of technology, and accommodations for injured workers. (*See excerpt below.*)

The U.S. Occupational Safety and Health Administration created ergonomics guidelines for nursing homes in 2003 and revised them in 2009, and it has some health care ergonomics modules online, but OSHA has not issued any safe patient handling guidelines for hospitals or other health care settings.

Mary Matz, MSPH, CPE, CSPHP, an ergonomics specialist with the Veterans Health Administration in Tampa, FL, has worked for years to spread the evidence for safe patient handling through the VA's annual Safe Patient Handling and Movement conference. She called the development of the ANA standards "huge."

"The goal was to develop universal standards that raise the bar but that were attainable, evidence-based and outcomes-focused," said Matz, who chaired the work group that drafted the standards. "They would apply to all health care settings across the continuum of care."

SPH across the continuum of care

The Interprofessional Standards of Safe Patient Handling and Mobility contain eight standards, which each have specific performance items:

Standard 1. Establish a Culture of Safety.

Standard 2. Implement and Sustain a Safe Patient Handling and Mobility (SPHM) Program.

Standard 3. Incorporate Ergonomic Design Principles to Provide a Safe Environment of Care.

Standard 4. Select, Install, and Maintain SPHM Technology.

Standard 5. Establish a System for Education, Training, and Maintaining Competence.

Standard 6. Integrate Patient-Centered SPHM Assessment, Plan of Care, and Use of SPHM Technology.

Standard 7. Include SPHM in Reasonable Accommodation and Post-Injury Return to Work.

Standard 8. Establish a Comprehensive Evaluation System.

"These standards set an important foundation of safety that all nurses and health care workers deserve," says Daley.

The standards call for a written plan with stated goals and objectives, a technology assessment, mobility assessment of patients, and an ongoing evaluation of the safe patient handling and mobility program. Health care workers are expected to "actively engage" in the safe patient handling and mobility program.

Each standard includes "considerations for community settings" — suggestions for adapting the standards to non-facility settings, such as home health care. It's important for standards to be practical and useful across the continuum of care, said Matz.

"Patient-handling risk is not just limited to the nursing profession or a hospital," said Matz. "We knew the national workgroup must be multi-disciplinary."

[*Editor's note: More information about the standards and ordering information ($21.95 for ANA members, $29.95 for non-members) is available at* www.nursingworld.org/SPHM-Standards.] ■

Helping health care workers cope with stress

'This is costing employers a lot of money'

Health care workers are more stressed-out than workers from any other industry. They have high rates of depression. And while their challenges may seem to be personal ones, health care employers are beginning to recognize that mental health is a workplace concern, too.

Having an Employee Assistance Program (EAP) that relies solely on employees to seek counseling and other help isn't enough, says **Clare Miller**, director of the Partnership for Workplace Mental Health, which is part of the American Psychiatric Foundation. Employers need to be proactive in offering help, she says. To support employers, the Partnership has just released a new toolkit through its educational initiative, The Right Direction (www.rightdirectionforme.com/ForEmployers.html).

"The reality is that this is costing employers a lot of money — that's the business case [for addressing stress and depression]. But there's also a human reason," she says. "Employers realize more and more that they have a role in helping people get the care they need."

Workplace factors such as staffing and scheduling contribute to fatigue, stress and depression — and conversely, mental health issues lead to a loss of productivity. (*See related article on p. 92.*)

An integrated approach to mental health incorpo-

rates the traditional EAP with wellness and occupational health to build resilience among employees, says **Marguerite Wood**, LICSW, director of the Employee Assistance & Wellness Program at South Shore Hospital in South Weymouth, MA.

Stress is a way of life in health care, but South Shore Hospital wants to buffer that with coping skills. "We want people in our field to have the ability to flourish and have ultimate functioning despite the stresses," she says.

More than 10% want help

About one in nine health care employees who contact their EAP are looking for help with stress and anxiety – more than any other industry, according to a report by ComPsych Corp. in Chicago, a global provider of EAP services.

About two in five calls to EAP from health care workers involve concerns about depression or other psychological issues, ComPsych found in an analysis.

As employers increasingly provide programs for chronic disease prevention such as health coaching and wellness activities, employees also seek similar assistance for mental health issues, says Miller.

"Employees actually want information from employers about health," she says. "They look to the employer for some of that help and support."

That is exactly what South Shore Hospital seeks to provide with its Self Care in Health Care program. The traditional debriefings that occurred to help staff deal with the aftermath of trauma care and stressful work situations just weren't enough, says Wood.

"We realized that our staff was faced with tremendous stress, just in delivering health care services, but they didn't have the skills to manage it," she says.

'Building community in the workplace'

South Shore sought to create a toolbox of coping strategies that draw from evidence-based modalities: Cognitive behavior therapy focuses on changing negative or irrational thoughts. Positive psychology teaches optimism and gratitude. Mindfulness-base stress reduction uses meditation techniques. And the relaxation response encourages a state of deep rest.

In a pilot study, Wood and her colleagues gathered a small, randomized group of nurse managers. Twelve of them logged the time they spent in mindfulness training and kept a gratitude journal. They also completed a pre- and post-questionnaire called the Perceived Stress Scale. Five served as a control group.

The nurse managers in the intervention group had a four-hour training in which they learned about the brain and the impact of stress, coping modalities and the effectiveness of stress reduction. Then they met for 90 minutes each week for three months.

"We did a lot of role playing," says **Anna Micci**, LICSW, and EAP consultant. "They brought issues and we worked together on them as a group."

Before the intervention, the nurse managers registered twice the stress as would be expected compared to the general population. After the intervention, the stress levels of the control group continued to rise, while the stress level of the intervention group declined slightly.

The nurse managers placed the greatest value on the group support. "It's building community in the workplace," says Wood.

Maintaining the support groups and coping skills is a challenge, but South Shore is planning to offer follow-up sessions this fall.

Hospital leadership has remained committed to the stress reduction program — which is a key to its success, says Wood. The hospital's EAP is also integrated with the employee wellness program. "It's a mind-body approach," she says. ■

Treating depression helps the workplace

Programs boost job performance

Depression takes a toll on nurses and other health care workers. They may have trouble focusing on instructions, staying on task, or problem-solving, in addition to personal and physical problems that accompany depression.

That lag in productivity has a quantifiable cost in "presenteeism," but it also represents an opportunity. A focused program that includes care coordination, work coaching and cognitive behavior therapy can help employees cope with depression and improve their functioning at work, says **Debra Lerner**, MS, PhD, director of the program on Health, Work and Productivity at Tufts University in Medford, MA.

Lerner developed the Work and Health Initiative to address a pervasive and often unrecognized condition. About one in five nurses suffers from depression, a rate that is twice the national average, a recent study showed.[1] In a pilot study, the initiative improved work performance and reduced absenteeism, producing a cost-savings of $6,000 per participant.[2]

"There is a lot of undiagnosed depression. Even among people who do have a diagnosis, there is undertreatment," says Lerner. And the treatment for people

with depression rarely addresses specific issues with functioning at work, she says.

"Usually physicians don't hear about work problems until the employee is on the verge of losing their job or wants to file a disability claim," she says.

The Work and Health Initiative provides voluntary, confidential support to employees who have depression and are struggling at work, Lerner says.

Plan for better job function

The Work and Health Initiative is an eight-week program that connects employees with counselors in hour-long phone-based sessions. The counselors work with employees to create a plan for addressing functional problems at work.

The initiative uses work coaching to target specific performance issues and cognitive-behavioral therapy to change behavior. The counselor also provides care coordination with the employee's provider, such as communicating about the effectiveness of antidepressant medication.

"If the employee will give us permission to contact their physician or therapist, we will send a report every four weeks while they're in our program updating the provider about depression symptoms and how well the person is functioning on the job," says Lerner. "We can close the loop on the medical care system and the workplace."

In a study of 79 Maine government employees, the Work and Health Initiative led to improved symptoms. That group also showed significant improvement on job tasks, time management and productivity and reduced absenteeism compared to a control group.[2]

It's important for employees to know that they can get help with work functioning as an adjunct to medical treatment for depression, says Lerner. The services can be coordinated through an employee assistance program.

"There is a connection between having depression and having difficulty functioning at work. A lot of people don't make that connection," she says. "It is important to let them know they can get help."

The Work and Health Initiative is not yet commercially available, but Lerner hopes to have a product by early 2014. Meanwhile, employee assistance programs can help employees with depression in a disease management model, she says. Just as "a person with cancer or migraine headaches or COPD has the medical side and the functional side [that] both need to be addressed," depression also has functional dimensions that impact the workplace, she says.

REFERENCES

1. Letvak SA, Ruhm CJ and Gupta SN. Nurses' presenteeism and its effects on self-reported quality of care and costs. *Amer Jrl Nursing* 2012; 112:30-38.

2. Lerner D, Adler D, Hermann RC, et al. Impact of a work-focused intervention on the productivity and symptoms of employees with depression. *JOEM* 2012; 54:128-135. ■

Health care of the future — for employees

New model blends technology, personal touch

Health care workers in Boston are the first patients to test a new model of ambulatory care. As they adjust to telemedicine, health care teams and other innovations, they also are less likely to turn to the emergency room for routine (and costly) care.

"Our philosophy and our belief is that if you engage patients in a really great experience, you can then engage them to improve their health," says **David Judge**, MD, medical director of the Ambulatory Practice of the Future, a medical practice for employees and spouses at Massachusetts General Hospital.

There's good reason to encourage better health practices among hospital employees. A 2011 analysis of claims data found that medical care and prescription drug costs for health care workers are 10% higher than the general workforce.

They are more likely to be hospitalized for congestive heart failure, asthma, hypertension, HIV, diabetes, obesity-related conditions and mental health, and they were more likely to visit the emergency room. Yet they had fewer visits to a physician's office, the analysis found.[1]

The new practice at MGH makes it easier for employees to get care — and to get their questions answered — without taking much time off of work.

"It's not always easy to get into a primary care practice. That's not always [an employee's] first priority," says **Andrew Gottlieb**, NP, FNP-BC, director of Occupational Health Services at Mass General. "Without that relationship, it's a lot easier to just go to the emergency room."

Patient part of care team

The Ambulatory Practice of the Future began with a survey of employees, asking if they would be interested in a new model of health care. Each patient works with a team of providers — a doctor, nurse practitioner, nurse, and health coach. The patients set health goals

and the team follows up on the progress. Some contact is maintained through phone calls or "virtual visits," and patients can email their health information or questions.

"The response was great," says Judge. "A lot of folks indicated that even if they'd been with a primary care doctor for a while they'd be interested in something like this."

Patients first walk into a "living room" — it's designed to be homier than a waiting room — and check in at a kiosk. (Soon, patients will use tablets to update their information.) They can expect to spend an hour with the care team for the initial visit, and if necessary, at later visits. Much of that time is spent with the physician or nurse practitioner, Judge says.

"Part of what's really broken with primary care is stuffing three or four encounters into an hour," he says.

There's a collaborative spirit as patients work with the team to develop a care plan, says Judge. That collaboration is built into the design, with a care team work area.

After a patient visit, a nurse or health coach follows up with a phone call. Patients with chronic health conditions receive more steady contact. Patients also have access to an online portal, where they can see lab and test results.

'There's a sense that we're coaching across the team, not just with the formal health coach," says Judge. "So it's a different culture. The way we built the space and use the team and technology reinforces that. Patients are a part of the team."

Telemedicine helps monitor pts

This futuristic practice is also experimenting with the use of telemedicine in primary care. For example, in one study, patients with newly diagnosed hypertension will receive blood pressure cuffs that transmit data wirelessly. Nurses will be able to review the information and monitor patients remotely.

Social networking is another tool to link patients in peer-to-peer coaching — getting support and information from other patients with similar health conditions. The provider teams also communicate with employee health and are aware of the interrelationship between personal health issues and the workplace, Judge says.

The emergency room is still there for true emergencies — but patients pay a $100 co-pay if the primary care clinic would have been a more appropriate point of care.

The Ambulatory Practice of the Future opened in 2010 to the 25,000 employees and family members at MGH. More than 3,000 have enrolled, and the practice will eventually expand to 7,000.

Judge expects the practice to show that a more inviting, patient-friendly environment also can be cost-effective and produce better health outcomes. "We are looking at a lot of metrics around chronic illness, prevention and wellness. We are looking at the overall utilization of health care resources and the cost of this population," he says. ■

Added Tdap booster considered for HCWs

Pertussis immunity wanes even one year after immunization with Tdap, so routine re-immunization of adults is not cost-effective, an advisory panel for the Centers for Disease Control and Prevention concluded.

But CDC continues to recommend a one-time dose of Tdap for health care workers, and a workgroup with the Advisory Committee on Immunization Practices (ACIP) may consider additional booster shots of Tdap for health care workers, especially those who work with infants, who are at greatest risk of pertussis infection and severe disease.

Less than half of health care workers have received Tdap, says Mark Sawyer, MD, professor of pediatrics at the University of California – San Diego and chair of the ACIP workgroup on pertussis vaccines.

There's no "systematic data" on transmission of pertussis from health care workers to patients, says Sawyer. "I have heard anecdotal reports of transmission from an infectious health care worker to patients. We don't really know what the overall frequency is.

CDC is focused on preventing pertussis in infants by vaccinating people who have contact with infants as well as vaccinating pregnant women.

More than 48,000 pertussis cases were reported in 2012, the highest number since 1955. Washington, Vermont and Colorado reported epidemic levels of pertussis. The greatest inci-

dence was among infants less than one year of age. ■

CDC updating ID guidance

Should you restrict personnel who are colonized with *C. difficile*? Should you screen health care workers for Methicillin-resistant *staphylococcus aureus* (MRSA)? What should you provide as post-exposure prophylaxis for Group A streptococcus?

Those questions and others are being addressed as the Centers for Disease Control and Prevention updates its 1998 Guideline for Infection Control in Healthcare Personnel. That guideline is currently the oldest one that has not yet been updated. It addresses 22 infectious diseases.

The document will continue to be a key resource for occupational health and infection control, with an emphasis on ease of use, says **David Kuhar**, MD, medical epidemiologist. "We're committed to putting out a high-quality, useful document for the [health care] community," he says.

There is currently no timeline for the new guideline. ■

Final rule issued on wellness incentives

The Obama Administration issued a final rule allowing employers to create even greater incentives for wellness and smoking cessation.

Employers may give an incentive of up to 30% of the cost of an individual health care premium (up from a limit of 20%) for employees who participate in a wellness program, and an incentive of up to 50% for programs that prevent or reduce tobacco use, according to the rule from the U.S. Departments of Health and Human Services, Labor and the Treasury.

The rule includes provisions to ensure that wellness programs are "reasonably designed to promote health or prevent disease" and are not discriminatory. It becomes effective on Jan. 1, 2014. A copy of the final rule is available at https://federalregister.gov/a/2013-12916. ■

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.

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. ■

COMING IN FUTURE MONTHS

- CDC issues new guidelines on HIV post-exposure prophylaxis
- PEP success: No new cases of HIV from needlesticks
- Developing a creative wellness program
- How employers should respond to the aging of the workforce
- Update on national benchmarking on HC injuries

CNE QUESTIONS

1. A proposed B95 respirator, under development by the National Personal Protective Technology Lab (NPPTL) of the National Institute for Occupational Safety and Health, would:
   A. Protect against biologics and pass specific comfort tests.
   B. Have superior filtration compared to an N95.
   C. Incorporate a hood instead of a mask.
   D. Be identical to an N95 but marketed for health care.

2. Health care workers with egg allergy can safely have the influenza vaccine, the Centers for Disease Control and Prevention says, because:
   A. People with egg allergy do not react to the influenza vaccine.
   B. Influenza vaccines no longer are produced in eggs.
   C. Egg allergy symptoms are easily managed.
   D. They can take the recombinant vaccine (Flublok), which isn't produced in eggs.

3. The American Nurses Association's Interprofessional Standards of Safe Patient Handling and Mobility differ from the existing OSHA guidelines because:
   A. they are enforceable.
   B. they encompass different types of health care delivery.
   C. they are specific to hospitals.
   D. they include a discussion of body mechanics.

4. In its Self Care in Health Care program, what techniques did South Shore Hospital in South Weymouth, MA, use to reduce stress among health care workers?
   A. Weekly debriefings of ER and critical care staff.
   B. Training of supervisors to support employees.
   C. Cognitive behavioral therapy, positive psychology and relaxation.
   D. Enhanced use of traditional EAP resources.