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INSIDE

RELIAS MEDIA

Physician Burnout: Seeking Resilience in a Broken System

Women physicians face multiple drivers for burnout

By Gary Evans, Medical Writer

Healthcare facilities and employee health professionals have responded to an epidemic of physician burnout with programs to build resiliency, such as yoga and mindfulness meditation. However, even advocates of these approaches say they are not a panacea, as larger system-level problems are driving physician frustration and subsequent burnout.

The president of the American Medical Association (AMA) recently explained that a major source of physician burnout is the inability to deliver the patient care that clearly is needed.

"I hear these frustrations all the time," **Barbara L. McAneny**, MD, said in June in Chicago at the annual AMA conference. "There is clear evidence that burnout for employed physicians stems from a lack of control of their day-to-day work environment. It is also when they identify a clinical need but can't convince their employers to invest and try to solve it."

> "THERE IS CLEAR EVIDENCE THAT BURNOUT FOR EMPLOYED PHYSICIANS STEMS FROM A LACK OF CONTROL OF THEIR DAY-TO-DAY WORK ENVIRONMENT."

For example, physicians may see a need for more addiction medicine specialists in the current climate, but the hospital system has committed resources toward building a new wing, she said.

"For physicians in private practice, the frustrations are generally fewer resources to confront growing administrative requirements," McAneny

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added. "We cannot afford to provide social workers or dietary consultations because the physician fee schedule doesn't cover it."

Work structure interventions and changes can address some burnout issues. For example, a recent study[1] revealed that shorter rotations in ICUs blunted the effects of burnout. Shortening the length of rotations in a medical ICU from the traditional 14-consecutive day schedule to only seven days reduced reports of burnout by some 40% and increased measures of job fulfillment. Essentially, the reduced the number of consecutive days per rotation allowed sufficient recovery time for clinicians.

These system changes can be a critical adjunct to mindfulness, which remains an important method to build resilience. Often practiced in the context of meditation, mindfulness focuses on the present moment with nonjudgment and a sense of compassion. One of the essential concepts is to interrupt and silence the internal negative voice that can undermine the present and escalate anxiety and stress. *(For more information, see the October 2018 issue of* Hospital Employee Health*.)*

Mindfulness exercises are used in more hospitals to combat burnout, but larger system factors also must be addressed, says **Lisa Podgurski**, MD, medical director of palliative care services at the University of Pittsburgh Medical Center. Podgurski established a short mindfulness-based curriculum within the regular work schedule, focusing on self-care for palliative care providers.

"I got into this as a clinician seeing patients and recognizing certain skills that were helpful in coping with clinical work," she says. "Some of the things that I turned to personally were not what I had been taught in my professional background. They had more to do with things that I was taught at home. My grandmother used to tell my mother to 'make sure you keep your mind and your body in the same place.' That is sort of a very homespun version of the mindfulness message."

In a study[2] of her program, Podgurski and colleagues found that "participants reported high satisfaction with the series and showed statistically significant improvements in dimensions of mindfulness and mindfulness practices, sustained for seven months. Burnout levels in this group were much lower than reported national rates, [but] no statistically significant change was seen in burnout over the study period."[2]

Mindfulness practice can improve patient care by helping providers achieve a better mental state and ability to be more present with patients.

"Mindfulness is often touted as an individual approach, but burnout is a group issue to some extent if you look at the data," she says. "While it is helpful for each of the individuals in a group to build their own skills, that doesn't necessarily address systemwide issues like the volume of expectations for how many patients they see and time pressures for other things. Mindfulness alone is not sufficient."

Kimberly J. Templeton, MD, who recently authored research[3] on burnout and female physicians, said mindfulness interventions should work for both genders, but the effects are limited and the approach may be sending the wrong message.

"To some degree, we are blaming the victim," says Templeton, an orthopedic surgeon at the University of Kansas. "We are telling the physician that 'The reason you are

burned out is you don't take time out to do yoga and mindfulness training,' when the issue really is that they don't have time to get done everything that they need to do."

This feeds into the perception that burnout is an individual problem and not the result of a poorly structured healthcare system, she says.

"The onus should be on the healthcare organization to address burnout because there are issues like working in a culture where sexual harassment and gender bias are tolerated," she says. "Or, they are working with an electronic health record that is not adapted to the needs of the physicians."

Physicians can find themselves in "moral distress" when they see a patient in need but face barriers to care. "That leads to stress," says Templeton. "There is a disconnect between how they would like to practice — the control they would like to have over how they treat their patients — and what they are allowed to do."

The Joint Commission echoed this point in a recent paper on burnout in nurses, concluding that "mindfulness and resilience training alone cannot effectively address burnout unless the leadership is simultaneously reducing and eliminating barriers and impediments to nursing workflow, such as staffing and workplace environment concerns."[4] *(For more information, see related story on page 101.)*

The staggering costs of burnout would seemingly support most efforts to prevent it. Economic researchers conservatively estimated in a mathematical model[5] that physician burnout is costing the U.S. healthcare system some $4.6 billion annually, due in part to the churn of turnover and reduced clinical hours, says lead author **Joel Goh**, PhD, a visiting professor at Harvard Business School and a faculty member in the Department of Analytics and Operations at the National University of Singapore.

"We looked at this from a turnover point of view," he says. "When someone leaves, there are costs associated with that. These include advertising the new position, hiring benefits, loss of a period of productivity, training. All of this is costly. We often call this 'friction,' or transactional costs. As has been shown in previous studies, burnout increases risk of turnover. Turnover is a costly event. So, what we are saying is if you reduce that risk of turnover, it reduces the costs."

The cost analysis is conservative because burnout has ripple effects that are difficult to quantify. These intangibles include reduced quality of patient care, lower patient satisfaction, malpractice lawsuits, and the effect on other members of the care team.

"Intuitively, I believe these are all a major source of costs," Goh says. "The big problem is that we did not have the data to quantify this. We tried to be as vigorous as we could and used the data that we had in the study. Intuitively, I and my co-authors as well, think these [costs] are pretty large, even if they are not so easily quantifiable."

There is a need to perform research on individual interventions, but burnout is taking a major toll on the healthcare system, he says.

"Different levels of interventions have different levels of efficacy, so they may not see the level of gains," he says. "The way we see it is even if you can only reduce a part of it, that is significant. Our study will hopefully encourage people to look into things that can be done to help prevent physician burnout."

Burnout in Women Physicians

Are women physicians more prone to burnout than their male colleagues? Templeton and co-authors cite studies that show they are, but note a caveat that could affect the findings.

"One of the biggest issues in trying to define this is that there are differences in how men and women experience burnout," she says. "Women tend to suffer more from emotional exhaustion. Men tend to experience depersonalization. Emotional exhaustion is much easier to identify in yourself and others than depersonalization."

These are two of the classic categories of burnout in the frequently cited Maslach triad,[6] with the third diminished feelings of professional accomplishment. As the name implies, healthcare workers who are emotionally exhausted have no more to give. Depersonalization often manifests as cynicism and a negative attitude toward patients and colleagues.

"I don't think women are inherently more susceptible to burnout," Templeton says. "I think it is that they are subjected to more of the factors that can lead to burnout."

For example, women physicians may lack role models and mentors, face a shrinking number of years to bear children, may not be paid equally to men, may be passed over for promotions to leadership positions, and experience higher rates of sexual harassment, Templeton and colleagues noted in the paper.

"They are more subject to gender expectations, meaning that they're doing the majority of the work at home," she says. "There is only so much time in a day for everything they expect themselves to do as well as what their family and society expect them to do. It is less an inherent propensity to burn out, but rather that they are facing more issues that can lead to burnout."

Defining gender differences in burnout is important because women are comprising a larger proportion of physicians in training. The retention of women will be critical given the predicted physician shortage.

"Women now make up at least half of incoming medical students," she says. "They are a growing proportion of physicians that are in practice. Not only is it an issue now, but unless we address the system and societal issues that lead to this, we are going to have an even bigger problem down the road."

A clear majority of women physicians report experiencing gender discrimination, with much of it related to pregnancy or maternity leave, she adds.

"It should extend beyond maternity leave to what I call family leave," Templeton says. "What are the needs of women physicians over age 60? There are going to be more and more of them, and that is an area that has been neglected up to this point."

Throughout their lives, women are expected to be the caretakers of their families, she notes.

"A study that we did that we hope will be published soon found that about half of women physicians over the age of 60 were doing some caretaking for somebody," she says. "We need to expand the discussion to family leave."

What about delivering clinical care? On average, women physicians spend two minutes more on each patient visit than male physicians and are more likely to explore emotional and psychosocial issues, Templeton and co-authors reported.

"That improves patient care, but there are constraints on the time they are allotted in the clinic," she says. "You know what is going to benefit the patient, yet you are being told you don't have time to do that. That gets women really frustrated."

Women physicians are 2.27 times more likely to die by suicide compared to women non-physicians, the researchers reported.

"We think it is because women know how to do it. They've got the expertise to know the lethal dose of drugs, and they have access to them," Templeton says.

Healthcare institutions should prioritize the mental health of all physicians, with specific tactics employed for women clinicians, she says.

"I think they should bring attention of this to women to let them know about this issue and that it is not something they have to deal with on their own," she explains. "Hopefully, employee health can provide them some opportunities or help. They can also go through the physician health programs that are in most state medical societies. Women physicians should be told it is OK to seek help. This happens to a lot of women. Don't just go home and ruminate and think you are going to make it better by working harder, because that only makes it worse." ■

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The Joint Commission: Preventing Nursing Burnout

The Joint Commission (TJC) has identified nurse staffing, recruitment, and retention as "priorities for further evaluation in the coming year" to prevent nursing burnout, *Hospital Employee Health* has learned.

TJC recently issued a *Quick Safety* alert,[1] emphasizing that nursing burnout can worsen patient outcomes, including mortality. The report cited a 2017 literature review on preventing nursing burnout that identified six studies, representing 3,248 nurses worldwide.[2] These studies revealed that the most common factors related to burnout are exclusion from the decision-making process, the need for greater autonomy, security risks, and staffing issues.

Encouraging a "resilience-promoting environment," TJC cited a study[4] that revealed the following factors affect nurse resilience:

- Experience;
- Amount of satisfaction attained;
- Positive attitude or sense of faith;
- Feeling of making a difference;
- Leadership methods, such as debriefing, validating, and self-reflection;
- Support from colleagues, mentors, and teams;
- Insight in ability to recognize stressors;
- Maintaining work-life balance.

Q&A

Hospital Employee Health spoke to **Lisa DiBlasi Moorehead**, EdD, MSN, RN, CENP, associate nurse executive for TJC's Accreditation and Certification Operations. The following interview has been edited for length and clarity.

HEH: Is healthcare worker burnout a patient safety issue? Is this a case where protecting the worker protects the patient?

Moorehead: It is absolutely a case of "protecting the worker protects the patient." The literature well documents that burnout leads to turnover. Organizations need skilled nursing staff to meet care needs of patients they serve. Nurses make up the largest group of healthcare providers and are often thought of as the first line of defense in protecting patients from harm events or medical errors. If there are not enough skilled nurses present, patients are at greater risk of harm.

HEH: The paper mentions "developing support systems to combat stressors and to promote a culture of mutual openness." Can you comment on why this culture of openness is important?

Moorehead: A culture of openness allows for identification and naming of burnout. Identification and acknowledgment of an issue is necessary before it can be addressed. Organizational leaders need to support a reporting culture so that issues like burnout can be openly discussed, solutions identified, and then implemented.

I remember when I first became a nurse and the role socialization that occurred. Fellow nurses and I learned that a "good nurse" didn't take breaks, worked extra hours, and in no way asked for help in completing assignments, no matter how busy we were. We, as a profession, must do better at removing the stigma of needing help. In addition, we must better recognize the signs of burnout and foster resilience in ourselves and others.

HEH: Why is important to believe one is "making a difference?" How can healthcare facilities reinforce this feeling in the work place?

Moorehead: "Making a difference" has long been part of the narrative in enhancing employees, including nurses' job satisfaction. Knowing that the work one does is valued makes the challenges of a stressful environment worth the stress. Literature supports that satisfaction of performing meaningful work is a primary motivator in choosing nursing as a profession. I believe organizations that foster environments where nurses continue to experience satisfaction in their work, and feel it is viewed as meaningful, produce more satisfied nurses and experience less turnover.

Organizations reinforce the importance of nurses in a variety of ways. Shared governance is one such strategy. Nurses want to participate in making decisions that impact their work lives. Who better to ask how to improve medication administration processes than the person administering medications several times a day? Asking for nurses' input validates the value of nurses as skilled caregivers, improves the process, and impacts the quality of work life.

HEH: Is "the ability to recognize stressors" something that can be addressed in education and training?

Moorehead: Educating staff and leadership on recognizing stressors precipitating burnout should be taught and regularly reinforced. All should be trained to look for signs of burnout in themselves and others. Not only should nurses know how to recognize burnout, but they should also be able to identify steps to enhance resiliency. Knowing how to foster resiliency is crucial in combating burnout.

HEH: Mindfulness is an option many work places are using, but the paper notes "mindfulness and resilience training alone" are not enough if system barriers and impediments are not addressed. Does TJC expect that these problems will be addressed under leadership accreditation and/or patient safety standards?

Moorehead: Yes, The Joint Commission has several standards addressing nursing leadership's responsibility for the provision of nursing care along with adequate staffing to meet patient care needs. For example, nurse leaders are required to develop programs, policies, and procedures that determine how nursing care is provided and how care can be improved.

The nurse executive also has responsibility for implementing staffing plans to ensure quality care is provided.

HEH: Given the epidemic nature of burnout in healthcare, are you considering requiring more burnout prevention efforts or other interventions?

Moorehead: Joint Commission surveyors already evaluate the adequacy of staffing patterns, including the numbers and skill of nurses with related care impact. Efforts around recruitment and retention are also assessed. The Joint Commission's Chief Nurse Executive Council has also identified staffing, recruitment, and retention as priorities for further evaluation in the coming year.

HEH: Should employee health professionals consider forming a committee or adopting some other approach to address burnout prevention?

Moorehead: Yes, forming a committee with the authority to evaluate an organization's causes of burnout is a great first step. Getting nurses involved in this process will improve the likelihood of the committee's success. Remedying issues that stand in the way of providing care is usually the first element that comes to mind in addressing burnout.

Another, perhaps parallel, path is to identify additional strategies to value nurses and support them in their work and in building personal resilience.

As a Joint Commission surveyor, I have been to hospitals that created nurse lounges with refreshments and work stations for nurses to regroup and recharge. I have also visited organizations where nurses dictate narrative documentation and care planning notes to save valuable time. Other organizations provide creative scheduling options, or distribute laundry and housekeeping vouchers if certain overtime thresholds are met. ■

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WHO Declares Ebola Outbreak an International Emergency

Will the United States see cases again?

The World Health Organization (WHO) recently declared an international health emergency for the ongoing Ebola outbreak in the Democratic Republic of Congo (DRC) after a case appeared in a highly populated city with global air travel. The outbreak began in August 2018, and the WHO declared a Public Health Emergency of International Concern on July 18, 2019.[1]

In declaring an international emergency, the WHO is calling for international aid and assistance while emphasizing that it would be counterproductive to shut down travel to the region.

"One of the reasons they held off in making the emergency declaration, even though many people felt the conditions had been met previously, was out of fear that countries would implement travel and trade restrictions," says **Jennifer B. Nuzzo**, DrPH, SM, a senior scholar at the Johns Hopkins Center for Health Security in Baltimore. "Everybody thinks that is a bad idea. That is not the way you try to control the spread of Ebola. It can really slow down the response because aid workers, supplies, and other resources can't get into the region where they are needed."

The WHO acted after the first reported case in Goma, a city of 2 million people on the border with Rwanda. That raised the potential for Ebola to spread to other regions on the continent. It also could open a path out of Africa for the deadly virus. For example, flights from Goma to Ethiopia can connect for travel to the U.S., Europe, and Asia. The incubation period for Ebola is two to 21 days, with most cases showing symptoms at eight to 10 days.

As confirmed on July 14, the case was a man who traveled to Goma by bus and visited a local clinic for illness.

"He transferred the same day to the Ebola Treatment Centre [ETC] in Goma, and died while being transferred to the ETC in Butembo," the WHO reported.

While the outbreak response in the DRC has been undermined by civil unrest and violence, Goma has a public health presence that includes advisors from the CDC, Nuzzo says.

"[The CDC] was able to participate in the Goma investigation, and they found that some of the PPE that was used in evaluating this patient had been taken home [by caregivers]," she says. "Those are the kinds of problems that may go unnoticed unless you have a very keen eye on what is going on. That is enormously helpful. If there is any good news, I think it is the occurrence of cases closer to where the CDC personnel are located."

Johns Hopkins is one of 10 designated Ebola treatment centers in the United States that have enhanced capabilities such as designated biocontainment units and other control and treatment measures.

The 2014 outbreak in West Africa was characterized by a lot of confusion about personal protective equipment (PPE), particularly the finding that healthcare workers frequently contaminated themselves doffing the equipment. That may have been a factor in the case of two Dallas nurses who contracted Ebola but survived after caring for a dying patient from West Africa. The basic PPE needed is considerable in the new tiered system in the United States, even for frontline hospitals that will be looking to quickly hand off a patient to one of the Ebola assessment facilities.[2] *(For more information, see the April 2019 issue of* Hospital Employee Health*.)*

50 HCWs Killed by Ebola, Violence

Intensive follow-up of contacts of the confirmed case in Goma revealed no signs of subsequent transmission as this report was filed. Nineteen health workers were deployed from other posts to Goma to provide support in the response to this case, the WHO said. "There are currently no confirmed cases of EVD outside of the Democratic Republic of the Congo," the WHO emphasized.

As of July 21, 2019, there were a total of 2,592 Ebola cases in the DRC, and 1,743 have died. Tragically, 737 of the total cases are children younger than 18 years. A total of 140 healthcare workers are affected.[3]

Unverified reports indicate at least 40 healthcare workers have died of Ebola. In addition, marauding militia groups vying for control of the region have attacked healthcare workers in some 200 incidents, resulting in seven deaths and 58 wounded.[4] Given these circumstances, it has been difficult for the CDC and other response teams to

fight the outbreak on the frontlines in the DRC.

"You hear a lot about the security constraints and challenges, and those are clearly there. But there are also deficiencies in the response that have not been fully identified," Nuzzo says. "I think CDC and others have felt that not being in the field truly has hindered their ability to diagnose those problems and suggest fixes."

The CDC issued a statement of support for the WHO declaration, saying it has opened its emergency response center and deployed personnel to Africa.

Is Ebola Vaccination Effective?

As previously reported, healthcare workers are receiving the experimental Ebola vaccine, but the efficacy of immunization was not clear as this report was filed. The WHO reported an incident in which two healthcare workers were infected with Ebola despite receiving the vaccine. It demonstrated high efficacy in a one trial,[4] but now is administered on an unprecedented scale.

"Studies so far have suggested a very high rate of vaccine effectiveness, but you can envision there are some people who won't have a protective response as the numbers get larger," Nuzzo says. "In many of these cases, it is more likely they were vaccinated too close to when the exposure occurred. They weren't able to mount a full protective response. Sometimes, they have been vaccinated after an exposure."

There have been reports of nosocomial transmission in healthcare settings and treatment centers, but the proportion of these cases within the overall outbreak is unclear.

"In some cases, it is healthcare workers getting sick and treating patients," Nuzzo says. "In other cases, it is a patient going to a health facility for entirely different reasons and they end up sitting next to an [undiagnosed] Ebola patient. These might be places like smaller health clinics where people are bringing their kids for malaria treatment or something else."

Efforts to ensure a steady flow of PPE and reinforce proper use have been mixed.

"STUDIES SO FAR HAVE SUGGESTED A VERY HIGH RATE OF VACCINE EFFECTIVENESS, BUT YOU CAN ENVISION THERE ARE SOME PEOPLE WHO WON'T HAVE A PROTECTIVE RESPONSE AS THE NUMBERS GET LARGER."

"Purchasing additional PPE doesn't necessarily lead to systemic change in behaviors and practices," she says. "At one of the hospitals they had given people a lot of masks, gloves, and gowns. But then people reported blood on the floor, and they were wearing flip-flops. It's not just necessarily about the equipment; it is also about training, education, and safe practices beyond using gloves and gowns."

In contrast to the 2014 Ebola outbreak in West Africa, the current outbreak does not pose a significant threat to the U.S. unless it spreads to areas in Africa with frequent international travel, she says.

"In the West African outbreak in 2014, there was a considerable amount of travel between the United states and Liberia," Nuzzo says. "That isn't the case for the DRC and that is possibly why we see the U.S. not doing as much for this outbreak. That is one upside: There are not a lot of international flights to DRC."

All bets are off if the virus starts spreading to other countries in Africa.

"Once it goes into multiple countries, it is much harder," she says. "That is really where you feel like there is the potential for it to spiral out of control." ■

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Healthcare Workers at Risk of Slips, Trips, and Falls

Are nonslip shoes part of the answer?

In a study[1] that has implications for preventing slip injuries in healthcare, researchers at the National Institute for Occupational Safety and Health (NIOSH) found that wearing slip-resistant shoes dramatically reduced workers' compensation claims for school food service workers.

The study included some 17,000 food service workers from 226 school districts.

"Workers were clustered by school district, and the districts were randomly assigned either to a group that received no-cost, five-star rated, slip-resistant shoes or to a group that generally bought their own slip-resistant shoes," NIOSH reports.[2] "Investigators looked specifically at workers' compensation injury claims caused by slipping on wet or greasy surfaces, the type of incident that the shoes were designed to prevent."

The group given the slip-resistant shoes saw a 67% reduction in claims for slip injuries. No decline was seen in the control group. "The findings revealed a baseline measure of 3.5 slipping injuries per 10,000 months worked among the intervention group, which was reduced to 1.1 slipping injuries per 10,000 months worked in the follow-up period when slip-resistant shoes were provided," NIOSH researchers reported.

Q&A

Hospital Employee Health asked lead author **Jennifer L. Bell**, PhD, a research epidemiologist in the NIOSH Division of Safety Research, for additional comment in the following interview, which has been edited for length and clarity.

HEH: What are the implications of these findings for healthcare workers?

Bell: Any worker who encounters wet or greasy flooring conditions could potentially benefit from the use of slip-resistant footwear (SRF). In our slip, trip, and fall (STF) research[3] in hospitals, food services workers had the highest rates of overall STF-related injury claims of all worker groups in the hospitals, followed by parking, valet and transport workers, emergency medical service workers, and custodial and housekeeping workers. From our STF research in nursing care facilities, nursing aides and food services workers had the highest rates of overall STF-related injury claims. Anecdotally, from our time spent observing food services operations in hospitals and schools, food services workers and housekeeping custodial workers are frequently exposed to wet, greasy conditions.

HEH: How many healthcare slips were related to slick and wet surfaces? Given the findings of this new study, is it likely that many of those could be prevented by wearing the shoes used in the study?

Bell: In our NIOSH study looking at STFs in three acute care hospitals[4], the majority (23.6%) of STF-related workers' compensation injury claims were caused by contact with liquid contamination: water, body or cleaning fluid, grease, floor wax, and slick or slippery spots. Similarly, in our NIOSH study of nursing care facilities[5], the majority (36%) of STF-related workers' compensation injury claims were caused by contact with liquid contamination. Another study[6] analyzed STF-related injury data from six governmental and one industrial injury surveillance systems in the United States, United Kingdom, and Sweden to isolate the contribution of slipperiness to STF injuries. Slipperiness or slipping was found to contribute to between 40% and 50% of fall-related injuries. Slipperiness was more often a factor in same-level falls than in falls to lower levels.[7-9]

HEH: Based on the study results, would you recommend the use of slip-resistant shoes in healthcare?

Bell: This NIOSH study adds to the body of evidence that using highly rated SRF can lead to a reduction in injuries caused by slipping on wet and greasy flooring, and that the healthcare industry would likely benefit from increased SRF use.

HEH: Can you provide the most recent data on injuries resulting in STFs in healthcare?

Bell: Bureau of Labor Statistics[10] data for characteristics of work-related injuries involving days away from work in 2017 show that total STF is the second-leading cause of injury in the healthcare and social assistance industry, at 26.8%. The leading cause is overexertion/bodily reaction, which accounts for some 38% of total injuries.

HEH: The use of slip-resistant footwear was highly effective in reducing falls. Can you describe the

features of this shoe that prevent slippage?

Bell: There are many factors that affect a shoe's slip-resistance performance, with tread pattern, sole material composition, and wear of major importance. NIOSH selected one brand of slip-resistant footwear for use in this study based on highly ranked performance in wet, greasy conditions. We used the GRIP[11] slip resistance rating scheme for footwear, which uses rigorous scientific testing to measure and grade the slip resistance of footwear. We also considered the availability of a variety of sizes and styles of the upper portion of the shoe, and availability for purchase by the general public. In addition to the GRIP rating scheme, information and resources are becoming increasingly available to help employers and workers know how to select SRF with a high degree of slip resistance in a variety of conditions.

HEH: Is cost a factor, thus making employer-provided shoes a key to this intervention?

Bell: In our study, the SRF was offered free to workers in the intervention group. Workers in the control group had the ability to purchase the same SRF through a worksite payroll deduction program, but generally had to pay for the SRF themselves. Our study found that 94% of workers in the intervention group who were offered free SRF obtained the SRF, while only 20% of the workers in the control group who paid for their own SRF obtained the same SRF. This discrepancy could imply that cost was a factor in obtaining this brand of SRF.

Another study performed by researchers from the former Liberty Mutual Research Institute for Safety found that restaurant workers' use of SRF was highest (with 91% of workers wearing SRF) in restaurants where footwear was provided and paid for by the employer.

HEH: Would the prevented injuries cover the cost of the shoes for employers?

Bell: Our study was not designed to answer this question. To answer this question, an employer would have to look at a number of factors, such as their current rate of slipping-related workers' compensation injury claims, the size of the worker population, the cost of each style of shoe purchased, how many hours the workers work each month, employee tenure and turnover, and many other factors that affect the direct and indirect costs associated with worker injuries.

HEH: There is some mention that workers age 55 years and older may be a greater risk of these accidents. Given the number of older workers in healthcare, is the risk of falls increasing?

Bell: Another finding from this research was that prior to the no-cost slip-resistant footwear intervention, workers over 55 years of age had a higher probability of a slip-related workers' compensation injury claim — 4.2 injuries per 10,000 worker months. Workers under age 55 years had 2.3 injuries per 10,000 worker months. This is of public health significance because there is an increasing trend of more workers over age 55 remaining active in the U.S. workforce. Without intervention, slipping injuries may be an increasing injury problem. ■

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Quantifying the Occupational Risk of Tuberculosis

HCWs from countries with endemic TB may test positive

The CDC published data[1] on the level of tuberculosis in healthcare workers, which was used in part to support the recent recommendations[2] to drop routine annual TB testing in the absence of an exposure or ongoing transmission.

The epidemiology has shifted, with workers coming from countries endemic for TB much more likely to manifest later symptoms. Although it must be underscored that there still is TB in the United States, healthcare workers are not at the risk they once were.

"Historically, U.S. healthcare personnel were at increased risk for latent infection and TB disease from occupational exposures," says study co-author **Carla A. Winston**, PhD, MA, associate director for science in the CDC's Division of TB Elimination. "However, recent data show that is no longer the case."

Risk Factors Are Rare

Among 64,770 adults with TB between 2010 and 2016, 4% were healthcare personnel. The estimated case rate for healthcare personnel was 2.5 TB cases per 100,000 healthcare personnel, which was similar to the average national TB case rate of 3.2 cases per 100,000 persons, she notes.

"Medical and social risk factors for TB among healthcare personnel are rare," Winston says. "TB risk factors such as diabetes, homelessness, excess alcohol use, or drug use are less common among healthcare personnel compared with other adults."

Findings also indicate that healthcare personnel are infectious for a shorter time period, as evidenced by sputum conversion; have a lower proportion of cases attributed to recent transmission; and experience better treatment outcomes compared with other adults, she says.

"National surveillance data from 1995-2007 estimated the rate of TB among non-U.S.-born healthcare personnel [HCP] in the United States to be 10 times higher than among U.S.-born HCP," Winston and colleagues reported. "Recent TB transmission has been estimated to account for [approximately] 15% of TB cases diagnosed in the United States, but it has not been examined for HCP versus other adults."

Efforts to Curb TB in Healthcare Workers

TB reduction in healthcare was not a coincidence. It resulted after concerted TB control efforts followed outbreaks in healthcare facilities in the 1990s. The CDC recommends policies and procedures for TB control should be reviewed periodically and evaluated for effectiveness. While annual routine screening is no longer recommended, employee health professionals should base their policies on their local situation and TB prevalence in the community.

"Healthcare facilities might consider using serial TB screening for certain groups at increased occupational risk for TB exposure; for example, pulmonologists or respiratory therapists," Winston says. "Or, in certain settings where transmission has occurred in the past, like emergency departments."

It also is important that all healthcare workers receive annual TB education, she says. TB education should include information on risk factors, signs and symptoms, and TB infection control policies and procedures, the CDC recommends. Treatment for TB is strongly encouraged for healthcare personnel diagnosed with develop latent TB infection, Winston says. ■

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HOSPITAL EMPLOYEE HEALTH

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CE QUESTIONS

1. **The $4.6 billion annual cost of physician burnout in the U.S. health system was considered a conservative estimate because it did not include which of the following in the calculations?**

   a. Turnover
   b. Reduced clinical hours
   c. Malpractice lawsuits
   d. Sick leave

2. **Women physicians suffering burnout exhibit which symptom more than men?**

   a. Emotional exhaustion
   b. Depersonalization
   c. Diminished feelings of professional accomplishment
   d. Suicidal ideation

3. **The standard range of the incubation period for Ebola virus infection is two to 21 days. In which range do most cases present?**

   a. 3-5 days
   b. 6-7 days
   c. 8-10 days
   d. 13-15 days

4. **Jennifer L. Bell, PhD, a research epidemiologist in the NIOSH Division of Safety Research, said a previous study by NIOSH researchers revealed which group of healthcare workers at highest risk of slips, trips, and falls?**

   a. Patient transport workers
   b. Housekeeping
   c. Ambulance workers
   d. Food service workers

CE OBJECTIVES

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

1. Identify particular clinical, administrative, or regulatory issues related to the care of hospital employees;
2. 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;
3. 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.