



HOSPITAL EMPLOYEE HEALTH



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Healthcare Workers Remain At Risk of Patient Handling Injuries

OSHA inspectors assessing safe patient lifting programs

By Gary Evans, Senior Staff Writer

With proposed federal legislation in political limbo, too many nurses and their colleagues at the bedside remain at risk of life-altering injuries as they try to care for an increasing population of acutely ill, heavier patients without safe handling equipment.

If change does not come from the top down, perhaps it will come from the bottom up. Some nursing schools have added safe patient lifting equipment to their classes and curricula, creating the expectation that the injury prevention tools and devices will be available when their students graduate and take jobs in the field. And if said equipment is conspicuously

absent on their first day of work?

“Our culture is that if they go to work somewhere that doesn’t have the equipment, they should be asking, for safety reasons, why not? They should be

assertive and speak up so

the facility can really look into this,” says **Patricia O’Connor**, RN, MSN, CNE, an instructor at Saint Francis Medical Center College of Nursing in Peoria, IL. “It is really not appropriate with the type of patients we are seeing. There are so many acutely ill, obese, and bariatric patients that for safe

working conditions it is almost a necessity to have a least some kind of equipment to make the patient more mobile.”

“OUR CULTURE IS THAT IF THEY GO TO WORK SOMEWHERE THAT DOESN’T HAVE THE EQUIPMENT, THEY SHOULD BE ASKING, FOR SAFETY REASONS, WHY NOT?”

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While traditionally, nurses in training may have had access to the equipment as they train at affiliated hospitals, the new approach at some schools incorporates safe patient handling as essentially a standard of care.

“Having the proper equipment as part of the nursing curriculum isn’t so much about preventing injuries to the students — it is about educating the future work force,” says **Mary M. Rowan**, PhD, RN, CNP, clinical professor at the University of Minnesota School of Nursing in Minneapolis. “Hospitals tell us, ‘Your students show up for the new employee orientation and they know the equipment, they’re ready and they’re on board.’”

No Lifts Used in 8 of 10 Injuries

Unfortunately, these forward-thinking nursing schools are more the exception than the rule, says **Kent Wilson**, CIE, CSPHP, a certified safe patient handling professional and past president of the Association of Safe Patient Handling Professionals.

“There are some schools that have done that and we applaud them for it, but not enough schools overall are doing that,” he says. “We are hoping that it gets built into the curriculum of all nursing schools so when [nurses graduate] they are familiar with and understand the use of safe handling equipment. We know in the old days they just taught good body mechanics — bend your knees, keep your back straight, that type of thing. We know that doesn’t work. While good body mechanics are important — I am not against good body mechanics, quite the opposite — that in and of itself will never protect you

when lifting adult patients.”

The statistics bear him out, as healthcare workers continue to suffer back, neck, and shoulder injuries that threaten their livelihood and quality of life. The CDC found these and other patient-handling injuries accounted for 44% of OSHA-reportable injuries at 112 hospitals in 19 states from January 1, 2012, to September 30, 2014.¹ Of all patient handling injury reports, 62% included data on the use of lifting equipment. Of those, a stunning 82% occurred when patient lifting and handling equipment was not used.

The CDC report included 10,680 total injuries, including 4,674 caused by patient handling; 3,972 that resulted from slips, trips, and falls; and 2,034 due to workplace violence. Nurse assistants were more likely to sustain injuries than workers in other job categories, having more than twice the injury rate of nurses for patient handling. Compounding the problem, an ongoing shift in demographics could constrain a needed expansion of the healthcare workforce. To turn the old adage on its head, this trend could result in fewer hands — more work.

“We are seeing patients with acuity levels that continue to go up,” Wilson says. “We see patients in the ICUs that maybe 10 years ago wouldn’t have survived. We see patients that are in the medical-surgical units that would be in the ICUs 10 years ago. So the acuity level has gone up and the weight of patients is going up. We are seeing larger and larger patients, and it kind of creates this perfect storm when you consider the aging workforce.”

Action at the federal level has been stalled, though there is a bill in political limbo that would require healthcare facilities to reduce

manual lifting of patients by using safe patient lifting equipment as part of worker safety programs. The Nurse and Health Care Worker Protection Act (H.R. 4266/S. 2408) was reintroduced late last year, but has yet to gain traction in a divided Congress. The American Nurses Association is lobbying for passage of the bill, which was introduced by U.S. Rep. John Conyers (D-MI) and Sen. Al Franken (D-MN). The ANA also is calling for implementation of safe patient handling equipment in more nursing schools and recently published a paper citing strategies to prevent injuries from manual lifting. *(For more information, see related story on page 124.)*

Will OSHA Fill the Breach?

“The [HCW Protection Act] is still percolating, but it is a political hot potato, so who knows where that is going to go,” says Wilson, who spoke on safe patient handling recently in Myrtle Beach, SC, at the annual conference of the Association of Occupational Health Professionals in Healthcare. “OSHA has been using the general duty clause to cite hospitals from an ergonomic perspective.”

Indeed, OSHA announced an emphasis program last year that addresses several areas of safe patient handling. *(For more information, see related story on page 124.)* Still, some question whether the agency has the manpower and political will to really turn the tide on the long-standing issue. When OSHA enacted ergonomic injury protections in a short-lived standard, the agency was promptly defanged by Congress in a 2001 vote that negated the rule.

“When the ergonomic standard

came out — it was on the books for three months before it was repealed — the argument was that it was going to be extremely costly and that type of thing,” Wilson says. “Some of the same arguments are discussed now, but I think with patient handling the risk factors are much more clearly defined. There is not really an argument about what the risk factors are. The only argument is what is the best way to control it.”

A report issued last year by watchdog group Public Citizen

“THE SAD PART IS THAT THE VAST MAJORITY OF HOSPITALS DON’T HAVE A ROBUST PROGRAM — THEY TREAT IT AS KIND OF AN AFTERTHOUGHT, OR THEY HAVE BOUGHT SOME EQUIPMENT BUT THEY HAVE NO PROGRAM.”

concluded that despite widespread support for safe patient handling programs by OSHA, NIOSH, healthcare associations, and labor unions, “industry representatives reject regulatory proposals to reduce injuries to healthcare workers, [and] they also oppose proposals aimed at improving reporting of workplace injuries.”² Despite the resistance, 11 states have enacted safe patient handling or regulations of some type to address the issue, but again, there are questions about the resources

needed to inspect and ensure compliance.

“It is extremely frustrating when we see that there are hospitals that have very robust programs and they have been able to reduce their injuries to nurses by a significant amount — 80% and 90% compared to the baseline,” Wilson tells *Hospital Employee Health*. “Other hospitals just kind of dance around the edges of this and are excited about a 10% reduction — that could just be a statistical anomaly. We need to really see hospitals take a more aggressive approach.”

Hospitals may be understandably resistant to mandates for specific equipment and policies, but if lifting equipment is purchased as part of a comprehensive program, worker protections and cost savings can ultimately result.

“If it is just purchasing equipment — if you don’t have a program and the policies and procedures — then I would tend to agree with hospitals that it’s not going to work,” Wilson says. “You have to implement a plan on how you’re going to use the equipment. What type of equipment and where is it going to be deployed? What training is involved? The caregivers need to understand not only how to use the equipment, but how you are going to deploy the equipment.”

In the interim, employee health professionals may face entrenched opposition to purchasing the equipment, which can include slings, ceiling lifts, and hydraulics to help patients stand.

“The sad part is that the vast majority of hospitals don’t have a robust program,” Wilson says. “They treat it as kind of an afterthought, or they have bought some equipment but they have no program. Some hospitals have purchased equipment

but they have yet to implement a plan, so it quickly migrated to a closet storage room and that's where it has been sitting. [OSHA] is emphasizing a programmatic approach, which is do your risk assessment and make sure you develop policies and procedures that are clear, precise, and consistent. You have something to hold people accountable to."

The Business Case

Regardless, it makes business sense to use the equipment and avoid the injuries, as an accumulating body of research has shown. A key driver of the adoption of patient safe lifting equipment at St. Francis was that new nurses were incurring injuries when they left school and began working at the medical center, O'Connor says.

"One part of it was really financial-driven," she says. "Hundreds of thousands of dollars were going into rehabilitation, medical bills, and facilitating people being off — everything that is entailed when a worker is injured. It was a large financial burden to the medical center, and those numbers kept increasing."

Research shows that an initial investment in "safe patient handling policies, programs, and equipment can be recovered in fewer than five years," OSHA emphasizes in a report³ that cites several specific programs and the attendant return on investment. According to the agency, employee health professionals trying to make the business case to justify purchase of lifting devices should compare the cost of the equipment with the amount the facility pays out annually in workers' compensation claims. In addition, include indirect costs like staffing, overtime, turnover, and reduced productivity. Include data on improved patient care in like reduced falls and pressure ulcers. Estimate the percent reduction in patient handling injury costs expected over time as a result of a safe patient handling program. For example, an \$800,000 investment in a safe lifting program at Stanford University Medical Center saw a five-year net savings of \$2.2 million. "Roughly half of the savings came from workers' compensation, and half from reducing pressure ulcers in patients." OSHA reported.

The patient safety component is

a point of emphasis for safe lifting advocates, who argue that vulnerable workers put those under their care at risk.

"We emphasize this to hospitals because we know that patient safety is their No. 1 priority," Wilson says. "The edict within healthcare is to do no harm, but as I tell administrators, it is impossible to accomplish that task if you're not addressing the safety of the caregivers that take care of them. When you think about it, it is the same event, the same activity, the same circumstances. If the caregiver is not safe, the patient is not safe." ■

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OSHA Focus on Safe Patient Handling

ANA: Old-school workers may resist new equipment

While there is a general consensus that safe patient handling programs nationally suffer from a lack of implementation and enforcement, employee health professionals should be aware that OSHA is taking a close look at the issue when they inspect healthcare facilities.

In an encouraging sign to advocates of safe patient handling,

OSHA made it an issue of emphasis for healthcare inspections in a memorandum issued last year.¹

"It tells their inspectors that go into hospitals what to look for, and the majority of it is on patient lifting," says **Kent Wilson**, CIE, CSPHP, a certified safe patient handling professional and past president of the Association of Safe Patient Handling Professionals.

"There are some very specific questions the compliance officers are looking at when they go into the hospitals to inspect. Do they have a patient handling program, and what level is at operating at?"

Among the safe patient handling issues OSHA inspectors are looking for is evidence of a system for monitoring compliance with policies and procedures, and follow-up on

identified problems.

“They recognize that it is somewhat of a complicated system,” Wilson says. “It’s not just a matter of having the equipment and getting it out there, but also getting people to understand the nuances so they can look at things like team leadership,” Wilson says.

OSHA inspectors are also assessing the “decision logic” for selection and use of safe lifting devices.

“For example, if I don’t have clear algorithms or implementation plans within my unit, I may have been trained on a lift a couple of months ago and now it is time to deploy it,” Wilson says. “If I don’t know when and why I deploy that, then I may default to just doing it manually because I’m uncomfortable using the equipment. Or hospitals may have different types of equipment and they never explain to staff clearly when they are supposed to use them and why. They don’t have clear assessments to know which patient needs which piece of equipment for which task.”

In that regard, OSHA tells its compliance officers to determine when and under what circumstances manual lifts or repositioning of patients occur. They are also looking for an adequate number and variety of lift devices, including batteries and charging stations. “Note that no single lift assist device is appropriate in all circumstances. Manual pump or crank devices may create additional hazards,” according to OSHA.

Another OSHA expectation is that employees have been trained and can demonstrate competency in using the lifting equipment.

“Do they understand the various clinical aspects of the patients and the need to customize by unit

specificity, say with bariatric patients as opposed to pediatric patients?” Wilson says. “These types of things are skills that someone running a safe lifting program needs to have.”

Old School

While the issue is typically framed as tight-fisted hospitals versus injured nurses, some old-school healthcare workers may not use safe patient handling equipment even if it is available, according to a paper² recently published in the journal of the American Nurses Association.

“SOME CLINICIANS ARE DEVOTED TO MORE TRADITIONAL APPROACHES IN PATIENT CARE, EVEN FOR TASKS PROVEN TO CREATE SIGNIFICANT SAFETY RISKS FOR BOTH PATIENTS AND CAREGIVERS.”

Author **Roric P. Hawkins**, MBA, BSN, RN, safe patient handling coordinator at Michael E. DeBakey VA Medical Center in Houston, urges healthcare workers to make use of safe patient handling equipment a standard of nursing practice.

“Some clinicians are devoted to more traditional approaches in patient care, even for tasks proven to create significant safety risks for both

patients and caregivers,” Hawkins noted in the article. “For example, some nurses move patients manually because they believe technology puts a barrier between them and the patient, diminishing the human connection. However, using safe patient handling equipment doesn’t negate the value of human touch. It simply protects nurses and patients from injuries.”

Other key points by Hawkins are summarized as follows:

- Know the type and differences between your facility’s patient handling equipment, which can include ceiling lifts and portable devices like hydraulic lifts.
- Have equipment ready for use at the beginning of a work shift. Charged and ready equipment can reduce the temptation to move patients manually due to time constraints.
- Remember, safe patient handling equipment doesn’t eliminate the need to assist patients manually and use proper technique when doing so.
- When in doubt, err on the side of using lift equipment, as Hawkins warned that, “Many nurses have suffered debilitating injuries because they underestimated the equipment they would need to assist patients physically. . . . Trust your assessment skills and nursing instincts when determining which type of equipment provides the safest mobility option for both the patient and yourself.” ■

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Wellness Programs can Improve Health, Reduce Cost for HCWs with Diabetes

Condition can be controlled, but challenge to keep workers enrolled

Diabetes in healthcare workers is a major driver of medical insurance costs, as the chronic blood sugar disorder can set off a range of health problems and increase risk of stroke and heart disease.

Diabetes is a primary cause of kidney failure, and can cause nerve damage that affects vision and leads to foot ulcers and problems in other extremities. However, the disease can be managed through interventions like diet and exercise, which can also prevent “pre-diabetes” — early signs of blood sugar and insulin problems — from progressing to a chronic condition.

“We have a lot of people who are not pre-diabetic anymore because they adopted healthier wellness habits, have been exercising, and have gone to a lot of our classes on eating,” says **JoAnn Shea**, ARNP, MS, COHN-S, director of employee health and wellness at Tampa General Hospital (TGH). “We have had a lot of success with both our pre-diabetic populations and with our diabetics.”

Review of medical claims at the hospital indicated that diabetes was the highest-cost chronic disease in covered employees and spouses. Biometric data reviewed by Shea and colleagues found that 26% of TGH employees had pre-diabetes and about 7% had developed full-blown diabetes. Thus, healthcare workers have blood sugar and insulin disorders in much the same range as the general population. Nationally, an estimated 29 million people, or 9.3% of the U.S. population, have

diabetes and 8 million people are undiagnosed.

“We are actually in line with the state stats on diabetes,” Shea says. “In Florida it’s around 9%, and we are probably around 7% now. Pre-diabetes averages about 26% to 28%, so we are right in line with the CDC age-adjusted statistics.”

“FOR PHARMACY COSTS ALONE, IT IS ABOUT \$1,300 PER YEAR FOR A DIABETIC COMPARED TO \$300 FOR A NON-DIABETIC. WE SPEND \$12,000 MORE PER CLAIM ON A DIABETIC. SO WE SPEND ALMOST \$10 MILLION PER YEAR ON DIABETES ALONE.”

Medical care for diabetic TGH employees is much more expensive than for non-diabetics.

“For pharmacy costs alone, it is about \$1,300 per year for a diabetic compared to \$300 for a non-diabetic,” Shea says. “We spend \$12,000 more per claim on a diabetic than a non-diabetic. So we

spend almost \$10 million per year on diabetes alone.”

To lower costs and improve the health of employees, Shea and colleagues have developed a series of incentive-based wellness programs, including one called Living with Diabetes, that have led to improved outcomes in the hospital’s diabetic employees and spouses. Program components include the A1C blood test, which shows average levels of blood glucose over the past three months. It also includes an exercise program, regular eye and foot exams, and consultations with a pharmacist, nutritionist, and diabetes nurse.

“We probably have about 900 or close to 1,000 diabetics, and in 2013 we had almost 300 enrolled in the program,” Shea says. “This year, it is probably a little over 200. We have had some good results — we just need to increase A1Cs. People have to engage in it, so it is always a challenge.”

Incentives to participate are well worth the bang for the buck, as they can prevent the higher medical expenses of a worsening prognosis. Diabetic employees and spouses who participate in 2016 can earn from \$100 to \$800. To receive the incentives, employees and participating spouses must take steps like taking the A1C blood test.

“The program requirements are that they go to their primary care provider twice annually, and get two A1C tests during the year and one foot exam,” she says.

The first \$400 earned through participation goes toward the

employee's future copays for all family members. "Anything above \$400 they earn, we put on their paycheck at the end of the year," Shea says.

Additional programs include Moving with Diabetes, an eight-week workout program at the hospital fitness center. Employees and spouses who complete the program can earn \$200. Of 95 healthcare workers enrolled in 2015, all rated the program as good, very good, or excellent, she notes. They also indicated they would continue exercising on their own after completing the program.

"Living with Diabetes is only for our diabetics, but pre-diabetics are also identified through our biometric screening and a lot of them have joined our fitness and wellness

programs," Shea says. "We had a lot of success at getting them enrolled. We also have a lot of wellness programs that are for all employees."

Self-management is the Key

There is also a diabetes self-management class, a 10-hour program that pays \$300 in incentives for those who complete the course.

"That's a big deal," Shea says. "If anything, that class is what they all should do."

The self-management class covers nutrition, medications, insulin, symptoms, exercise, shopping, foot care, and dental care.

There are incentives for dental exams because high blood sugar

levels lead to greater levels of sugars and acids in the mouth, increasing risk of tooth decay and gum disease, Shea explains. Diabetics have more severe gum disease because diabetes lowers the body's ability to resist infection and slows healing. That, in turn, makes it hard to control blood glucose levels and may contribute to disease progression.

Is all this money well spent?

"We think so," Shea says. "We have some people who have lost a lot of weight and other pretty good outcomes, but the problem is keeping people enrolled. People who were in one year do not necessarily stay in the second year. It's hard to change people's health behaviors. But we feel good about this, and every year we tweak the program to see if we can get more high-risk people enrolled." ■

Hospital Employees Living with Diabetes

Wellness programs dramatically improve health

Beyond the numbers on the debilitating effects of diabetes on healthcare workers, there are personal stories of success that may inspire others to join wellness programs.

Adoption of health behaviors like better diet, weight loss, and exercise can stop the progression of pre-diabetes warning signs and help those with the chronic condition keep it in check, says **JoAnn Shea**, ARNP, MS, COHN-S, director of employee health and wellness at Tampa General Hospital.

Shea gave a thumbnail sketch of a few such workers identified by first name only at a presentation on diabetes recently at the annual conference of the Association for Occupational Health Professionals in Healthcare.

Carlos, a lift team tech, found out he had diabetes during an employee health screening in 2014. After enrolling in the hospital's Living with Diabetes program, he lowered his A1C glucose blood test score from 8.2 to 6.6. The only treatment he is on now is diet and exercise.

"The program is an excellent tool for early detection of high sugar levels and the need to address it," he says. "It is through the program that I found out I have diabetes and I gained the required tools to take care of it."

Dot, a housekeeping employee, found out she had pre-diabetes when she came to work at the hospital nine years ago. Four years later, her condition progressed to full type 2 diabetes and she joined the Living with Diabetes program. Dot lowered

her A1C score from 14.8 to 8.2.

"It has helped me getting to see a doctor and take care of myself," she says. "I am feeling much better now. I have more energy — before, I used to be so tired."

Lanier, an environmental services aide, has a family history of diabetes and high cholesterol. He started working with employee wellness, received individual health coaching, and enrolled in the hospital's diet and exercise program. In three months, he decreased his blood pressure, cholesterol, and body fat. A1C test scores were normal and his HDL cholesterol increased.

"Both my father and uncle had amputations due to diabetes," he says. "I wanted to get healthy to avoid complications from diabetes." ■

Respirator and Surgical Mask Myths and Controversies

NIOSH comments on study that found no difference in clinical settings

As part of its recent annual N95 Day respirator activities, the National Institute for Occupational Safety and Health (NIOSH) sought to bust several myths about respiratory protection, including the misconception that “respirators and surgical masks provide the same type and level of protection for the user.”¹

This would certainly seem to be patently false based on lab studies, which show the greater effectiveness of a well-fitted N95 in filtering out aerosols and particles that could go through a surgical mask.

Indeed, NIOSH notes that, “Surgical masks are typically disposable, loose-fitting, and do not form a tight seal to the face. They are also not designed to capture a large percentage of small particles, which means that they cannot prevent the wearer from breathing in airborne particles that may be transmitted by coughs, sneezes, or certain medical procedures (i.e. aerosol-generating procedures). Because of these factors, healthcare workers using surgical masks will not be protected against exposure to airborne transmissible diseases.”

However, actually determining the comparative efficacy of respirators and masks in clinical studies is much more difficult. In a recent meta-analysis, researchers in Canada could find no difference in protection between masks and respirators.² They reviewed three randomized clinical trials, one cohort study, and two case-control studies.

“No significant difference in risk of laboratory-confirmed respiratory infection was detected between

healthcare workers using N95 respirators and those using surgical masks in the meta-analysis of the randomized trials,” the authors concluded. “It was not surprising to find that N95 respirators were generally more efficient filters with better face-seal characteristics than surgical masks when tested in the

“WHILE IT MAY SEEM THAT N95 RESPIRATORS SHOULD BETTER PROTECT HEALTHCARE PERSONNEL THAN MEDICAL MASKS AGAINST AIRBORNE INFECTIONS IN THE WORKPLACE, THIS NOTION HAS NOT BEEN VALIDATED BY OBJECTIVE CLINICAL EVIDENCE.”

laboratory. However, transmission of acute respiratory infections is a complex process that may not be appropriately replicated by surrogate exposure studies.”

A contributing factor is likely that respirator use is compromised by a lack of adequate fit-testing, and

workers may handle and readjust the equipment during use.

“N95 respirators are often considered uncomfortable for regular use, and improper wearing or adjustment of the respirator because of discomfort could lead to inadvertent face contamination, thus negating the potential protective benefit,” the researchers found.

This is somewhat reminiscent of the findings of PPE use during Ebola, which revealed that healthcare workers frequently donned equipment improperly and contaminated themselves removing it. However, the findings were strongly refuted by some occupational health professionals, including a member of the *Hospital Employee Health* editorial board.

“The absence of proof is not the proof of absence,” says **Gabor Lantos**, MD, PEng, MBA, president of Occupational Health Management Services in Toronto. “There is much evidence in the aerosol physics and bioaerosol literature of airborne spread from coughs and sneezes. There is a good reason why NIOSH has never approved surgical masks as PPE.”

Still, the authors concluded in the paper that “randomized controlled trials conducted in clinical settings represent the most valid information to evaluate the effectiveness of N95 respirators. They are more relevant to real clinical situations and report actual outcomes in healthcare workers, and therefore they are the best evidence on effectiveness to inform policy-making.”

HEH requested an interview with

the contact author on the meta-analysis study, but had not heard back as this issue went to press. We asked the NIOSH authors of the respirator myth document about the implications of the meta-study. Responding jointly by email as one source were **Deborah Novak**, PhD, RN, and **Ronald Shaffer**, PhD, both of NIOSH's National Personal Protective Technology Laboratory in Pittsburgh.

"We are aware of the meta-analysis published earlier this year," Novak and Shaffer noted. "The article shares several similar themes as a paper³ with NIOSH co-authors that addresses this same topic. For example, both papers report that across many laboratory studies, N95 filtering facepiece respirators (FFRs) show less filter penetration, less face-seal leakage, and less total inward leakage than surgical masks and that randomized controlled trials (RCTs) are important. However, the RCTs completed to date have yielded inconclusive results because of limitations in experimental design and implementation. For example, study subjects failing to wear the assigned device during all times of potential exposure (i.e., poor compliance with the intervention) negate the superior fit and filtration properties of the FFR. Current studies such as ResPECT⁴ may be able to overcome some of these difficulties, but a complete face-fitting respirator vs. surgical mask clinical trial remains elusive."

Indeed, in the recently published ResPECT study, the authors concluded, "While it may seem that N95 respirators should better protect healthcare personnel (HCPs) than medical masks against airborne infections in the workplace, this notion has not been validated by objective clinical evidence. Low

tolerance to respirator wear among HCPs may prompt more frequent or longer periods of removal, compared to medical masks, to an extent that the benefits of higher levels of filtration and lower levels of leakage around the facial seal afforded by respirators are offset or subjugated."

Novak and Shaffer of NIOSH say N95 use "will reduce inhalation exposures to airborne biological agents by a factor of 10 or greater when complete, effective respiratory programs are in place, including initial and annual fit-testing and proper donning on each use."

Noncompliance with proper consistent FFR use is a major detriment to effective respiratory protection, they add.

"Selecting a respirator during fit-testing that provides a good seal against the face is essential — akin to finding the right size shoe for your foot," the NIOSH researchers wrote. "Like with shoes, a 'one-size-fits-all perspective' does not apply to this device."

In terms of preparedness, NIOSH also noted in the myths document that many hospitals do not have the HHS-recommended six- to eight-week supply of disposable N95s.

"The consequences could be very serious if a facility does not have an emergency preparedness plan to obtain necessary supplies to protect their employees, such as N95s," Novak and Shaffer wrote. "Therefore, the best approach is to have an emergency preparedness plan in place, including access to needed supplies, in the case of an emergency."

In addition, NIOSH recently posted a video on YouTube that may be useful in educating healthcare workers about how respirators work.

The five-minute video emphasizes that "a particle is a particle," and

employees facing biological agents are protected by the same N-95 worn by a construction worker exposed to dust. Whether the particle is "living" or "infectious" plays no role in how well it will be collected by a filter, the video explains. (*The video can be viewed at: <http://bit.ly/2doRDOS>.*)

"Pathogens in the air behave no differently than do all other particles of similar physical properties," Lantos says. "Their infectious natures are of no consequence if they do not enter the body. There are numerous scientific experiments that demonstrate the superior protection offered by N95 respirators." ■

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Surgical Group Calls for No Scrubs Beyond the Hospital

Do clothes make the healthcare worker?

In the name of patient safety, we have heard calls for “bare below the elbows” care in hospital wards, and now the American College of Surgeons (ACS) is strongly urging surgical workers to drop the common practice of wearing scrubs in public.

“Many different healthcare providers — surgeons, anesthesiologists, CRNAs, laboratory technicians, aides — wear scrubs in the OR setting,” the ACS stated in a recently issued policy.¹ “The ACS strongly suggests that scrubs should not be worn outside the perimeter of the hospital by any healthcare provider. To facilitate enforcement of this guideline for OR personnel, the ACS suggests the adoption of distinctive, colored scrub suits for the operating room personnel.”

The ACS said the practice imbues such traits as professionalism and “introspection,” and builds rapport with patients. “In addition, insofar as clean and properly worn attire may decrease the incidence of healthcare-associated infections, it also speaks to a desire and drive for excellence in clinical outcomes and a commitment to patient safety,” the ACS noted.

To those uninitiated to the surgical culture, the ACS statements calling “skull caps” a symbol of the profession may seem a little bizarre.

“The skull cap can be worn when close to the totality of hair is covered by it and only a limited amount of hair on the nape of the neck or a modest sideburn remains uncovered,” the ACS states. “Like OR scrubs, cloth skull caps should

be cleaned and changed daily. Paper skull caps should be disposed of daily and following every dirty or contaminated case. Religious beliefs regarding headwear should be respected without compromising patient safety. ... Soiled scrubs and/or hats should be changed as soon as feasible, and certainly prior to speaking with family members after a surgical procedure.”

Surgical Attire Guidelines

Additional ACS surgical attire guidelines are summarized as follows:

- Scrubs and hats worn during dirty or contaminated cases should be changed prior to subsequent cases, even if not visibly soiled.
- Masks should not be worn dangling at any time.
- Operating room scrubs should not be worn in the hospital facility outside of the OR area without a clean lab coat or appropriate cover-up over them.
- OR scrubs should be changed at least daily.
- During invasive procedures, the mouth, nose, and hair (skull and face) should be covered to avoid potential wound contamination. Large sideburns and ponytails should be covered or contained. There is no evidence that leaving ears, a limited amount of hair on the nape of the neck, or a modest sideburn uncovered contributes to wound infections.
- Earrings and jewelry worn

on the head or neck where they might fall into or contaminate the sterile field should all be removed or appropriately covered during procedures.

- Clean appropriate professional attire — not scrubs — should be worn during all patient encounters outside of the OR.

Shirts and Skins

Another fashion-forward trend in healthcare is the so-called “bare below the elbows” approach that was popularized in the United Kingdom as a way to reduce *Clostridium difficile* infections. Similar to necktie bans, the idea is that pathogens could spread by contaminated sleeves and lab coats. The University of Iowa Hospital and Clinics adopted the practice this year at the urging of **Michael Edmond**, MD, MPH, hospital epidemiologist at the Iowa City facility.

“We use contact precautions for epidemiologically important organisms, placing patients in private rooms and wearing gowns and gloves when we go into the room,” Edmond said at last year’s IDWeek meeting in San Francisco. “This is based on evidence that clothing does become contaminated and the assumption that pathogens on contaminated clothing can be transmitted to patients.”

Thus, the logical extension of contact precautions concerned with clothing as a fomite is “bare below the elbows,” which means

no sleeves, white coat, neckties, wristwatch, and no jewelry except a wedding band, he said.

“The intention of this is to allow a good hand- and wrist-washing and to avoid contamination of sleeve cuffs,” Edmond said. “I have personally practiced bare below the elbows consistently since 2009.”

The postulated role of clothing in the transmission of pathogens is based on the awareness that patient skin and the surrounding environment are contaminated with pathogens, he said.

“The clothing of the healthcare worker becomes contaminated by being in contact with the patient or the environment,” he said. “We add to that some pieces of clothing are infrequently laundered, particularly neck ties and lab coats, [which harbor] pathogens we presume may be transmitted from the healthcare worker clothing to the subsequent patient.”

The pathogens may be able to linger on lab coats in particular, which may be infrequently laundered. Edmond cited a study showing washing of lab coats occurs on average about every two weeks.²

“We found that about a third of people wash their white coats every week; about 40% every month, and most interestingly and quite appalling, almost 20% reported that they had never washed their lab coat,” he said. “They’re like Pigpen.” ■

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CE QUESTIONS

1. In CDC data on injuries to healthcare workers caused by patient handling, which of the following were more likely to suffer injuries than other job categories?
 - A. RNs
 - B. Nurse assistants
 - C. Patient transport aides
 - D. Physicians
2. According to OSHA, research shows that an initial investment in safe patient handling policies, programs, and equipment can be recovered in fewer than:
 - A. 10 years.
 - B. 8 years.
 - C. 5 years.
 - D. 3 years.
3. JoAnn Shea, ARNP, MS, COHN-S, said the stress and responsibility of patient care causes higher rates of diabetes in healthcare workers compared to the general population.
 - A. True
 - B. False
4. Though respirators are much more effective in lab studies, they are roughly comparable to surgical masks in actual clinical practice. Which of the following were cited as explanations for this finding?
 - A. Lack of adequate respirator fit-testing.
 - B. Workers may handle and readjust respirators during use.
 - C. Lack of compliance in wearing respirators at appropriate times.
 - D. All of the above.

COMING IN FUTURE MONTHS

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