HOSPITAL EMPLOYEE HEALTH

THE PRACTICAL GUIDE TO KEEPING HEALTH CARE WORKERS HEALTHY

AUGUST 2016 Vol. 35, No. 8; p. 85-96

INSIDE

AHC Media

Protect Patients, Harm Workers? Cleaning Agent Raises Concerns

Healthcare dilemma: Kill the bugs but spare the workers

By Gary Evans, AHC Media Senior Staff Writer

Preliminary results of an ongoing public health investigation indicate that a powerful sporicidal cleaning agent used in some 500 hospitals may be linked to wheezing, watery eyes, and asthma-like symptoms in healthcare workers, the National Institute for Occupational Safety and Health (NIOSH) reports.

The situation is emblematic of an ongoing dilemma in healthcare. Strong products needed to protect patients from an epidemic of *Clostridium difficile* — a spore-former difficult to remove from the hospital environment — may trigger respiratory symptoms in housekeeping and other healthcare workers exposed to the chemicals during cleaning.

"There really has to be a balance between patient safety and worker safety," says **Megan Casey**, RN, MPH, a NIOSH nurse epidemiologist who is investigating the case. "We need to make sure that worker safety is not compromised as we continue this battle against healthcare-associated infections."

> "WE NEED TO MAKE SURE THAT WORKER SAFETY IS NOT COMPROMISED AS WE CONTINUE THIS BATTLE AGAINST HEALTHCARE-ASSOCIATED INFECTIONS."

The NIOSH investigation began after healthcare workers at Magee-Womens Hospital in Pittsburgh contacted the agency and expressed concerns about their reactions to a new cleaning product in use at the facility. Employees complained of symptoms that included burning eyes, nose, and throat; cough,

Financial Disclosure: Senior Staff Writer **Gary Evans**, Managing Editor **Jill Drachenberg**, and Nurse Planner **Kay Ball** report no consultant, stockholder, speaker's bureau, research, or other financial relationships with companies having ties to this field of study.

HOSPITAL EMPLOYEE HEALTH

Hospital Employee Health®,
ISSN 0744-6470, is published monthly by
AHC Media, LLC
One Atlanta Plaza
950 East Paces Ferry Road NE, Suite 2850
Atlanta, GA 30326.
Periodicals Postage Paid at Atlanta, GA 30304 and at additional mailing offices.

POSTMASTER: Send address changes to:
Hospital Employee Health®
P.O. Box 550669
Atlanta, GA 30355.

SUBSCRIBER INFORMATION:
Customer Service: (800) 688-2421.
customerservice@ahcmedia.com.
AHCMedia.com
Hours of operation: 8:30 a.m.- 6 p.m. Monday-Thursday; 8:30 a.m.-4:30 p.m. Friday, EST.

SUBSCRIPTION PRICES:
U.S.A., Print: 1 year (12 issues) with free Nursing Contact Hours, $499. Add $19.99 for shipping & handling. Online only, single user: 1 year with free Nursing Contact Hours, $449. Outside U.S., add $30 per year, total prepaid in U.S. funds.

MULTIPLE COPIES: Discounts are available for group subscriptions, multiple copies, site licenses, or electronic distribution. For pricing information, please contact our Group Account Managers at Groups@AHCMedia.com or (866) 213-0844.

ACCREDITATION: AHC Media LLC is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

This activity has been approved for 1.25 nursing contact hours using a 60-minute contact hour.

Provider approved by the California Board of Registered Nursing, Provider #CEP14749, for 1.25 Contact Hours. This activity is intended for employee health nurse managers. It is in effect for 36 months from the date of publication.

Opinions expressed are not necessarily those of this publication. Mention of products or services does not constitute endorsement. Clinical, legal, tax, and other comments are offered for general guidance only; professional counsel should be sought for specific situations.

SENIOR STAFF WRITER: Gary Evans, (706) 424-3915, (gary.evans@ahcmedia.com).
MANAGING EDITOR: Jill Drachenberg
CONTINUING EDUCATION AND EDITORIAL DIRECTOR: Lee Landenberger

EDITORIAL QUESTIONS:
For questions or comments, call
Gary Evans at (706) 424-3915.

headache, dizziness, nausea, asthma exacerbation, and skin burns and rashes.

"The process here at NIOSH is that employers or at least three employees can request a Health Hazard Evaluation," Casey says. "We will come into a workplace and do an assessment for a potential hazard. In this case, the product was introduced in March of 2014, but it wasn't until roughly a year later that employees requested a health hazard evaluation from us."

NIOSH conducted a hazard evaluation report at the hospital, concluding in an April 12, 2016, interim report to the facility that the "findings support the conclusion that exposure to OxyCide is associated with adverse health effects and indicate the need to minimize employee exposures."[1]

OxyCide is an EPA-registered non-bleach sporicide and virucide manufactured by Ecolab in St. Paul, MN. The primary ingredients are acetic acid [AA], peroxyacetic acid [PAA], and hydrogen peroxide [HP]. The product safety indications say it requires no personal protective equipment when diluted with water by an automated dispenser before use.

"OxyCide is proven effective against several harmful bacteria and viruses that are known to cause healthcare-associated infections, including *Clostridium difficile* bacteria spores," **Roman Blahoski**, director of Global Communications at Ecolab, told *HEH* via email. "*C. diff* infections are linked to 29,000 deaths each year. Hospitals across the country are finding that OxyCide is a key component of their programs to battle healthcare-acquired infections."

C. diff is, indeed, a formidable risk to patients that has stubbornly resisted national reduction efforts. The current major push to rein in antibiotic use should reduce *C. diff*, which has a clear route to the gut once patients lose commensal bacteria via antimicrobial therapy. As it stands right now, however, healthcare workers may be caught in a crossfire as powerful chemicals are used to kill persistent *C. diff* spores on environmental surfaces.

"[Employee health professionals should] encourage workers to report any symptoms that might be related to this product or any product containing acetic acid, peroxyacetic acid, or hydrogen peroxide," Casey tells *Hospital Employee Health*. "One of our main findings was that product users reported more work-related symptoms than non-product users. These are symptoms that improved for the employee on days off or on vacation."

Summary of Findings

A branch of the CDC, NIOSH recently published a summary of the findings in the MMWR[2] that included the following key points:

- Researchers interviewed 79 (78%) of 101 current environmental services staff about their health.
- Among the 68 employees who worked with the product, the most commonly reported health outcomes were watery eyes (46%), nasal problems (41%), asthma-like symptoms (28%), use of allergy medicine (16%), and shortness of breath (16%).
- A total of 30 (44%) reported at least one work-related health outcome. Most commonly reported work-related symptoms were watery eyes (29%) and nasal problems (22%).
- Among 10 respondents with self-reported physician-diagnosed

asthma, six reported that something at work brought on or worsened their asthma, and three mentioned the cleaning product specifically by name.

• Air sampling results for HP ranged from 6 parts per billion (ppb) to 511 ppb; for AC, from 7 ppb to 530 ppb; and for PPA, from 1 ppb to 48 ppb. All measurements for HP and AA were below their respective occupational exposure limits of 1,000 ppb and 10,000 ppb. No full-shift exposure limit has been established for PAA.

With regard to that last point, investigators did the air sampling in proximity to workers cleaning with the product. As noted above, the exposures were within established limits, but the CDC/NIOSH published report spoke to the lack of resolution on several aspects of these particular chemical agents.

"Few assessments of worker exposure to hydrogen peroxide, acetic acid, and peroxyacetic acid in healthcare settings have been conducted, despite the use of this product in more than 500 hospitals nationally," investigators noted.[2] "Two previous investigations conducted by the Occupational Safety and Health Administration at hospitals in Pennsylvania and Vermont … in response to employee concerns about symptoms reported while using this product, were limited to air sampling. No health assessments were performed."

In the CDC\NIOSH evaluation, environmental services staff members reported work-related symptoms despite measured air sampling exposures that were below the established full-shift limits for hydrogen peroxide and acetic acid. However, because both hydrogen peroxide and peroxyacetic acid are strong oxidants, it is possible that the mixture of hydrogen peroxide and peroxyacetic acid contributed to the symptoms reported by workers, the investigators noted.

"We found a higher prevalence of asthma in departments with higher hydrogen peroxide measurements," Casey adds. "Hydrogen peroxide is one of the chemical components in this cleaner. We looked at what are called standardized morbidity ratios. We took the number of people who had diagnosed asthma and compared that to the U.S. adult population. We found significantly more asthma than we would expect in the U.S. adult population on these departments that had higher hydrogen peroxide measurements."

Hospital: 'No Comment'

Magee-Womens Hospital spokesperson **Gloria Kreps** told *HEH* the hospital had no comment on the NIOSH report.

In a previous interview with a Pittsburgh newspaper, Kreps was

NIOSH Measures to Protect HCWs Exposed to Cleaning Agents

Brie M. Hawley, PhD, an industrial hygienist in the NIOSH Respiratory Health Division, recommends the following measures to protect healthcare workers exposed to cleaning products with acetic acid, peroxyacetic acid, and hydrogen peroxide:

- Hospitals should be alert for respiratory, skin, and eye symptoms in environmental services staff.
- Hospital management can implement a reporting system that would permit employees to report work-related symptoms, with the option for employees who do not wish to be identified to remain anonymous.
- If environmental services staff do report respiratory, skin, and/or eye symptoms, a combination of engineering and administrative controls might be needed to reduce employee exposures.
- Additionally, although a one-step disinfectant, virucide, and deodorizer might be considered for widespread use in a hospital, the decision to use disinfectants in specific areas of a healthcare facility should reflect the level of risk of a healthcare-acquired infection.
- Physicians should be aware of the potential adverse health effects of occupational exposure to cleaning products and disinfectants when evaluating patients with respiratory and skin complaints.[1] ■

REFERENCE

1. Hawley, BM. Are Hospital Cleaning Staff at Risk When Using a One-step Cleaner? NIOSH Science Blog. April 29th, 2016: http://bit.ly/29vFOUQ.

quoted as saying, "We are committed to maintaining safe, sanitary facilities for our patients and employees. Ecolab … represents that OxyCide is an EPA-approved cleaner that is safe when used correctly and reduces patient exposure to dozens of dangerous organisms. We have no reason to doubt them. … As with any product, its safe use by our employees is of utmost importance and any issues regarding its safe use are investigated immediately."[3]

Indeed, though raising general awareness and recommending several specific measures be taken by the hospital, NIOSH has decided for now that the evidence in the ongoing investigation is not conclusive enough to recommend stronger action on the cleaning product.

"Due to the limitations of our study we can't definitively determine the exact timing or the causality of these [worker] symptoms to the product," Casey says. "However, this product has been listed as an asthmagen by the Association of Occupational and Environmental Clinics [AOEC]. We also know that the chemical components of this cleaning product [HP, PAA, and AA] have caused asthma in some case reports we have seen. We are certainly concerned, but due to the limitation of our study we can't make a definitive determination."

Asthma issues

HEH confirmed that the AOEC has added OxyCide to its list of asthmagens, which is defined by NIOSH as substances that can cause asthma.[1] The AOEC classified the cleaning product as a "sensitizer," which, according to NIOSH, is a substance that can cause an immune response and adverse respiratory effects even at low levels of exposure.

"The AOEC developed an exposure code listing for clinical use by our members in 1994," says **Katherine H. Kirkland**, DrPH, MPH, executive director of the association. "Since that time, we have expanded the listing of occupational and environmental exposures and we have developed a protocol for designating some of the exposures as asthmagens."

In consultation with two AOEC physicians clinicians, Kirkland clarified via email that, "an individual may develop asthma due to exposure to a sensitizing agent at very low levels of exposure, and this condition may become permanent and require treatment even after exposure has stopped. The longer an individual is exposed to an asthmagen, the greater the risk of developing asthma. The person must be exposed to the chemical/substance that caused the initial reaction. This is not a list of substances that aggravate an individual's asthma, but a list of substances that cause asthma. There is a much larger group of chemicals/substances that can aggravate someone's asthma once they have asthma. That said, there are many substances on this list that would also aggravate someone with asthma if they already had asthma."

The AOEC recommends following the basic NIOSH occupational safety and health hierarchy to protect workers from such hazards (http://1.usa.gov/28UdXvA).

"We recommend that employers provide programs to protect workers from exposure to substances that can eliminate or minimize exposure to chemicals that cause asthma," the AOEC told *HEH*.

The specific measures NIOSH recommended to Magee-Womens included the following:

- not using the cleaner in non-patient areas,
- use of personal protective equipment,
- additional return airflow be provided in two janitorial closets,
- implement a reporting system that would allow employees to report work-related symptoms with the option to remain anonymous, and
- discontinue use of the product as a spray cleaner in favor of rags or wipes.

Spraying Stopped

"Efforts should be made to help workers try to reduce their exposure to these products," Casey says. "With regard to the specific hospital, they have limited product spraying. Originally they were putting the product into spray bottles and spraying it. They no longer do that — they only use it in a wipe form and they also provided goggles to the workers because they were concerned about splashing in disposing the products."

Given the unresolved issues, NIOSH is considering whether additional recommendations for PPE equipment should be made.

"The safety data sheet for this product currently recommends no personal protective equipment," Casey says. "Right now that is one of the things that we are looking at and considering whether we should be recommending various levels of protective equipment when using these types of products. Certainly, for workers in a hospital having trouble with this product or a similar product, they need to talk to their supervisor and try to reduce their exposure as much as possible."

There is also the lingering question whether the worker symptoms are all

acute and self-limiting or could result in chronic health problems.

"That is still one of the questions that we are investigating," she says. "We did a separate survey which looked at the acute effects. So essentially, our industrial hygienist interviewed staff members using the product after their shifts to get a sense of the acute symptoms. This [other] survey that we did asked questions in terms of the last 12 months — things like diagnosis of asthma. We tried to look at the chronic conditions in our survey and we also had a survey that addressed acute conditions, but we are still analyzing that data and taking a look at both surveys." ■

REFERENCES

1. NIOSH. HETA 2015-0053. Interim Report 3. April 12, 2016.
2. CDC. Notes from the Field: Respiratory Symptoms and Skin Irritation Among Hospital Workers Using a New Disinfection Product — Pennsylvania, 2015. *MMWR* 2016;65(15);400–401.
3. Nuttall, R. OxyCide is supposed to make hospitals cleaner and safer for patients, but what about the staff that has to use it? *Pittsburgh City Paper* February 18, 2015.

Staffing Woes Endanger Workers and Patients

More than numbers, match staff to patient acuity

Inappropriate staffing – either in terms of numbers or a mismatch between the level of caregiver and the acuity of patients — is a chronic issue in healthcare that puts both patients and staff at higher risk.

To address the issue, the American Association of Critical-Care Nurses (AACN) held a summit meeting May 18 in New Orleans. They discussed variables that create staffing mismatches, identified barriers to solving the problem, and explored potential solutions. Though staffing influences patient and worker safety, fiscal pressure on healthcare facilities means doing more with less in many areas.

Of some 400 nurses at the summit, 64% responded that staffing in their unit was appropriate less than half the time during the past month. Among the solutions discussed was establishment of a formal process to evaluate staffing needs. So-called "acuity-based" staffing systems allocate the number and skill level of nurses on a shift according to patient needs — not solely according to number of patients. Another strategy to consider is the establishment of nurse-driven staffing committees that focus on collaborative scheduling, nursing teams working together, and staff-developed incentive programs, the AACN reports. Other possible solutions discussed include using off-site expertise via telehealth in some cases as well as of having an in-house pool of experienced nurses to draw from. *Hospital Employee Health* asked **Connie Barden**, RN, MSN, CCRN-K, CCNS, chief clinical officer at AACN, a few questions on this important issue.

HEH: What effect does inadequate staffing — either in sheer numbers or a mismatch between staff level and patient acuity — have on critical care nurses and other healthcare workers? One would intuitively think they are more vulnerable to fatigue and burnout, and could be more likely to incur patient lifting and sharps injuries and exposures. Can you please comment on this concern?

Barden: Chronically inappropriate staffing has been shown to contribute to nurse fatigue, decreased job satisfaction, and ultimately high turnover rates in some organizations. Fatigued and chronically overworked staff have a higher likelihood of committing errors, which threatens patient safety. Ultimately, these factors can even contribute to burnout, which has been shown to have a high prevalence among healthcare teams in critical care.

The AACN is collaborating with our colleagues at *CHEST*, Society of Critical Care Medicine, and the American Thoracic Society to publish a call to action, citing the rate of burnout syndrome in critical care teams as high as 50%. The high-stress environment of critical care combined with chronic understaffing and other factors may contribute to this syndrome, symptoms of which can include exhaustion, insomnia, gastrointestinal problems, anxiety, and hopelessness.

HEH: Do you think the staffing problems in critical care nurses are similar to what other nurses are facing, or is there something (i.e. high acuity?) particularly challenging about staffing in critical care?

Barden: The literature reflects concerns about staffing from nurses fairly consistently regardless of patient location. Critical care units can be particularly challenging since those are the areas where the

sickest, most unstable and vulnerable patients receive care. Many types of patients require specific, unique, and specialized knowledge and skills in order for appropriate care to be delivered. Appropriate staffing requires a careful match of the knowledge, skills, and abilities of the nurse with the needs of the patient and their family.

HEH: Of the some 400 nurses at the summit, 64% responded that staffing in their unit was appropriate less than half the time during the past month. In addition, only 8% thought their unit had appropriate staffing at least three-quarters of the time. What are some of the major factors that are driving this trend?

Barden: AACN has studied the reality of nurses' work environments over the past decade using multiple National Critical Care Nurses' Work Environment studies, as well as an extensive assessment of the barriers that are getting in the way of optimal patient and nurse outcomes. Those studies, which date back to 2006, show that inappropriate staffing is a major barrier to optimal nursing practice and one of the most dangerous threats to patient safety and to the well-being of nurses. The trend seems to have intensified more recently with budgetary constraints and reimbursement cutbacks that are impacting the financial bottom line of hospitals.

HEH: From the patient safety side, do suboptimal staffing levels contribute to healthcare-associated infections and other adverse outcomes?

Barden: Yes. Numerous studies document that poor nurse staffing contributes to suboptimal patient outcomes, including hospital-acquired infections, falls, and complications after surgery, for example. In addition, injuries to nursing staff may increase as well as frustration, moral distress, missed nursing care, and ultimately burnout.

HEH: Can you explain some of the variables that create staffing mismatches?

Barden: Staffing mismatches are sometimes simply about inadequate numbers of staff being present, but not always. For example, if a unit is staffed with a seemingly appropriate number of nurses, but the knowledge and skills of those nurses don't match the needs of the patient and family, then a mismatch continues to exist. A unit with 75% inexperienced nurses may be sufficient on one day — depending on patient/family needs — and totally unacceptable on another. The high-acuity and high-stakes environment of critical care — that is, life and death — often hangs in the balance. The solution, therefore, must include the effective match between the needs of the patient and family and the knowledge, skills, and abilities of the nurse. This requires nurses to be involved in all aspects of staffing from planning to evaluation. It includes the provision of strong support resources so that nurses' time is spent on activities that only nurses can provide. And it must entail the use of technology that assists and augments the contribution of nurses.

HEH: What are some of the commonly identified barriers to solving staffing problems?

Barden: Poor or ineffective communication about staffing challenges can hinder progress. Communications must include data and impact — on both patients and nurses — to be effective. Skilled communication and collaboration between staff caring for patients and unit/division/organizational leaders is key. Some units or organizations don't have a well-defined staffing plan. Such a plan must include a defined evaluation process that considers feedback from those delivering care to patients, unit leaders, and ideally, patients and/or families themselves. A staffing plan that includes goals and metrics by which the appropriateness of staffing will be measured is key.

Another barrier may be insufficient support services. Without strong support resources, nurses' time is spent on activities that take them away from the real work that only skilled, knowledgeable nurses can provide. Finally, technology must be selected in collaboration with frontline nursing staff so that it supports nursing work (and therefore care delivery) rather than hinders or complicates it.

HEH: Can you cite an example or two of how these barriers can be overcome?

Barden: Many units are using innovative approaches to addressing staffing challenges. At our recent National Teaching Institute and Critical Care Exposition held in New Orleans in May, several speakers highlighted novel approaches to addressing staffing challenges. Julie Reisetter, chief nursing officer at Banner Telehealth Services, discussed the use of the tele-ICU in supporting staff in the care of critically ill patients at Banner Health in Phoenix. Diane Buntyn, CNO at Southwest Alabama Medical Center, told participants about the acuity-based staffing system implemented at her organization. Staff nurses Oletha Riley and Margaret Sumovich talked about a new and creative nurse-driven scheduling program in place at Children's Mercy Hospital in Kansas City, MO, that has improved morale and decision-making around difficult staffing issues.

Sharing these and many other stories about successes creative nurses and their leaders are finding to

address this important challenge is critical not only to patients' well-being, but for nurses' as well.

AACN's work on creating healthy work environments through publication of the AACN Standards for Establishing & Sustaining Healthy Work Environments (2005) provides the blueprint for how healthy environments can be created and implemented, including a standard specific to Appropriate Staffing. In March 2016, AACN published a 2nd edition of the standards, which are now supported by additional research and new evidence confirming the link between healthy work environments and optimal outcomes for patients, healthcare professionals, and organizations.

In addition, the AACN Synergy Model of Patient Care discusses the alignment of nurse competencies with patient needs. ■

Has the Needlestick Problem Been Solved? AOHP Study Answers a Resounding 'No'

Gains plateau, fear of complacency

Bloodborne pathogen exposures to healthcare workers were higher than expected and not declining in incidence rates, according to the latest results from the Exposure Study of Occupational Practice (EXPO-STOP)[1].

The ongoing study of members of the Association of Occupational Health Professionals in Healthcare (AOHP) ascertains blood exposures (BE) to healthcare workers via percutaneous sharps injuries (SI) or mucocutaneous (MC) exposure such as a splash to the eyes.

A 16-item electronic survey was distributed to AOHP members to ascertain BE incidence and denominator data for their hospitals. Participants were asked to report the annual number of SI and MC exposures for all staff. The annual SIs were reported separately for surgical procedures, for nurses, and for doctors. The denominator metrics included 100 occupied beds (OB), full-time equivalent (FTE) staff, FTE nursing staff, and adjusted patient days (APD).

Responses from 84 hospitals in 28 states were included in the analysis. In 2013, 7,158 BEs were reported and in 2014, 6,954 BEs were reported. In both years, 73% of BEs were SIs and 27% were MC exposures. The SI incidence rates in 2013 were: 33.0/100 OB; 2.6/100 FTE; and 0.54/1,000 APD. In 2014, the SI incidence rates were: 33.3/100 OB; 2.7/100 FTE; and 0.56/1,000 APD.

There was a time beginning in the 1980s when healthcare workers were literally at risk of death if they seroconverted for HIV following a needlestick. Awareness of the risk of exposures led to the federal Needlestick Safety and Prevention Act in 2000. With implementation of the act, there was a drop off in blood exposures, which are now beginning to edge back up as a certain level of complacency sets in.

"It did drop right after that legislation took place, but over the years since then it has continued to creep up," says **Linda Good**, PhD, RN, co-author of the study and director of Employee Occupational Health Services for Scripps Health in La Jolla, CA. "I think a lot of people saw the initial drop and said, 'Good, we took care of that problem.' But the takeaway from this study is that legislating this is not enough to take care of it. It's something that needs continued attention."

For one thing, hepatitis C virus — the most common chronic bloodborne infection in the country — threatens healthcare workers with severe liver problems if infected. Then there is the threat of Zika and whatever follows it as a novel bloodborne pathogen. The effectiveness of post-exposure prophylaxis for HIV — and the development of antiretroviral drugs that drive virus counts to levels that are scarcely detectable — may have contributed to a sense of complacency.

"That was one of the things that motivated the AOHP to commission this study," Good says. "We were concerned that there might be an assumption out there that this problem had been solved. This is an ongoing issue and it won't just go away without sustained focused attention."

Even if the cold calculus of potential infection and exposure outcomes has shifted to somewhat safer footing, armchair analysts should walk a mile in a nurse's shoes before dismissing the emotional trauma that follows a needlestick. A study that looked at this issue concluded that "enduring psychiatric illness" can result from needlesticks, but swift delivery of source-patient test results may reduce duration of

depression and anxiety.[2]

Among the case vignettes are this one, summarized as follows:

"A 36-year-old healthcare worker in an emergency department was emptying a clinic bin. She was replacing a bag when a needle, which had been incorrectly disposed of, pierced her leg. She was immediately shocked and worried and tried to make it bleed. She talked to the doctor on duty and he tried to reassure her that they had not had any knowingly infected patients in, but she was not reassured. She was worried that she had been exposed to an infectious disease such as HIV or hepatitis or another disorder and underwent a course of injections over the next week, which gave her diarrhea. The injections then moved to monthly. She also had to have regular blood tests to check on whether she had seroconverted and was suffering from hepatitis B or C or HIV. She received the all-clear from blood tests approximately 6 months later. Her anxiety gradually subsided thereafter."

As part of the EXPO-STOP study, Good interviewed some of the sites that had successfully driven needlesticks and exposures down and kept them there.

"The hospitals that have been very successful are not complacent about this at all," she says. "They have a goal of achieving zero, so they don't consider any bloodborne pathogens exposure as acceptable. That's kind of remarkable. So anytime it happens, they really drill down with the employee that has been injured, their manager, and they investigate any unsafe practices. They look for a root cause rather than make an assumption about it."

"Effective reduction strategies in the low-incidence hospitals included prevention through education, data-driven communication, immediate root cause investigation of all exposures, adoption of safer safety engineered devices, engagement of staff on all levels, and acceptance by staff that safety is their responsibility," the authors reported.

For example, one hospital picked up a trend that blood draws interrupted by visitors or other healthcare workers could be at higher risk of resulting in a needlestick. As a result, they placed a sign or symbol on the door indicating a procedure was in progress and developed a script to explain and alert the patient to the moment of needle puncture.

"Sometimes it's just something very simple — low-tech interventions — [which were possible] because they paid attention to what was causing their exposures," Good says. "Another hallmark of sharps-safety hospitals is that they hold everyone responsible. They don't say it's employee health's job to cut down on needlestick injuries. It's everyone's job."

Another example cited from a low-exposure hospital was a team of safety advocates, which includes members from front-line staff, employee health, department directors, and hospital administration. The group meets regularly for breakfast and to discuss injury rates and identify key problems. ■

REFERENCES

1. Brown C, Dally M, Grimmond T, et al. Exposure Study of Occupational Practice (EXPO-STOP): An update of a national survey of sharps injuries and mucocutaneous blood exposures among healthcare workers in U.S. hospitals. *AOHP Jrl* 2016:36(1):37-42.
2. Green B, Grifiths EC. Psychiatric consequences of needlestick injury. *Occup Med* 2013;63(3):183-188.

Zika Transmitted by Needlestick to Lab Worker

The question of whether Zika virus can be transmitted via needlestick is no longer hypothetical.

As feared, the virus can, indeed, transmit to a healthcare worker who suffers a percutaneous injury, but a Pittsburgh lab worker who was occupationally infected is recovering nicely, the Allegheny County Health Department (ACHD) reports.

The case appears to be the first documented instance of Zika transmission via needlestick, though public health and hospital officials have warned since the epidemic began that it was certainly possible. It underscores that healthcare workers must be vigilant with infection control precautions and needle safety to protect themselves from Zika and a host of other bloodborne pathogens.

The woman "contracted the virus from a needlestick while working with the Zika on an experiment in a laboratory. Her symptoms have resolved and she is doing well," Allegheny health officials reported. The needlestick reportedly occurred on May 23 at a University of

Pittsburgh lab, with the worker becoming symptomatic about a week later and then fully recovering.

The most common symptoms of Zika are fever, rash, joint pain, and conjunctivitis. While now a confirmed occupational threat to healthcare and lab workers, Zika is primarily spread by *Aedes* mosquitoes and can be transmitted sexually.

The worker was reportedly advised to cover up when outside and use insect repellent to reduce the chances of spreading the virus to others via a mosquito bite. ■

To Stop Needlesticks, Educate, Communicate, and Investigate

Engage both workers and management in prevention

The EXPO-STOP[1] authors recommend that employee health professionals consider the following best practices to prevent needlesticks and other exposures to staff.

Education:

• Require new clinicians to demonstrate competency with all new devices.

• Discuss exposure prevention individually and in orientation in a personalized way.

• Build a bloodborne pathogen exposure event into simulation lab training scenarios.

• Use vendor support and clinical educators to "stretch" resources and provide all-shift coverage.

• Provide mandatory initial and ongoing education using a variety of methods, including online modules and face-to-face interaction with employee health and/or workers' compensation nurse case manager.

• Require a review process and waiver for requests for non-safety-engineered devices.

Communication:

• Make initiatives data-driven, and report using metrics aligned with the organization's goals and reporting style.

• Be transparent with findings and get them "on the record" by reporting through established committees that reach decision-makers.

• Encourage reporting (including "near misses") by making it convenient and efficient, such as a call-in or online reporting system.

USE FLAGGING OUTSIDE PATIENT ROOMS TO ALERT CO-WORKERS THAT A HIGH-RISK PROCEDURE IS IN PROGRESS TO AVOID AN INADVERTENT STARTLE AND POSSIBLE INJURY.

• Develop awareness campaigns to reach frontline staff.

• Use safety scripting to prepare patients for procedures that are high-risk for employee exposure, such as blood draws.

• Use flagging outside patient rooms to alert co-workers that a high-risk procedure is in progress to avoid an inadvertent startle and possible injury.

Investigation:

• "Drill Down" — Conduct a thorough, systematic root cause analysis to avoid assuming causation.

• Actively involve the manager and the injured employee in the follow-up investigation.

Engagement:

• Hold both the healthcare worker and management responsible for their roles in the "Safety Formula," and when they do it well, praise them.

• Partner with stakeholders using safety forums for discussion. For example: "If you arrived to work today and it was a safer environment, what would it look like?"

• Include perceptions of workplace safety in employee opinion evaluation.

• Use frontline staff "Safety Advocates" partnered with employee health and administration in injury reduction initiatives. ■

REFERENCE

1. Brown C, Dally M, Grimmond T, et al. Exposure Study of Occupational Practice (EXPO-STOP): An update of a national survey of sharps injuries and mucocutaneous blood exposures among healthcare workers in U.S. hospitals. *AOHP Jrl* 2016:36(1):37-42.

UK: 60% Wear Gloves When Not Warranted

Jennie Wilson, PhD, MSc, RGN, HonMFPH, an associate professor in the Infection Prevention Society in Brentford, United Kingdom, delved into some of the emotional and psychological aspects of glove use recently in Charlotte, NC, at the annual meeting of the Association for Professionals in Infection Control and Epidemiology (APIC).

"We defined as appropriate glove use [when healthcare workers] were doing a procedure with their gloves on that involved direct contact with blood and body fluid, mucous membranes, or that involved a patient under contact precautions," she said. "If they were weren't doing any of those things, we considered the glove uses inappropriate. Almost 60% of the [observed] episodes where gloves were used, there wasn't an indication to use them. This tells us that people are widely using gloves when they don't need to use gloves for infection control."

In a study that included interviews with healthcare workers, Wilson found workers wearing gloves for routine tasks like making a bed. Others had "no particular reason" to be wearing gloves, but nevertheless were doing so.

"I asked the auditors, what were these people doing?" Wilson says. "We don't know, really; they were just wandering around with a pair of gloves on — sometimes for about 20 minutes."

Of course, wearing gloves routinely — apparently for the worker's protection — translates to contamination via other environmental surfaces, equipment, and the like before the worker approaches the patient bedside.

"When you have a nice pair of blue gloves on, you're very hygienic," she says. "Not necessarily — because you have probably touched hundreds of things before you get to the patient. But the impression given is you are very hygienic because you have gloves on."

Even some workers who changed their gloves appropriately to begin care made the mistake of leaving them on for more than one task with the same patient.

"They may empty a catheter bag, give the patient mouth care, check the patient's blood sugar — all with the same pair of gloves on," she said.

> "ALMOST 60% OF THE [OBSERVED] EPISODES WHERE GLOVES WERE USED, THERE WASN'T AN INDICATION TO USE THEM."

Williams and colleagues interviewed some 50 healthcare workers in two hospitals to better understand their rationale for such ubiquitous glove use. The following are some of the comments they received from healthcare workers explaining why they wear gloves:

- "Some older men or women can't always wash their own clothes and things. They cannot always be as clean as they might have been when they were younger."
- "When patients have skin conditions, even when you know that it's not anything which is contagious and catching…it looks horrible."
- "I find that when I have gloves on I'm less OCD about needing to wash my hands."
- "I was told in induction that we don't need gloves for washing patients …but, for me, I don't feel comfortable not wearing gloves. I feel a lot safer and I feel a lot more relaxed."
- "[Gloves] make me feel safer, more relaxed, more comfortable, and more confident."
- "If I wasn't wearing gloves [for washing a patient], I think I'd feel kind of awkward."
- "Obviously if it's quite personal areas, you're definitely going to wear your gloves."
- "I'd take a judgment from the patient, I think, because sometimes they might be more uncomfortable if you didn't wear gloves. Whereas if you've got your gloves on, it's a bit more clinical, so they feel more dissociated from it."

Ultimately, glove use is highly influenced by personal decisions and healthcare workers may feel they have the right to wear them for their own peace of mind.

"That's really critical because if we are going to change behavior, we have to recognize that that's how people feel about it," Williams says. "They don't think anybody else has the right to tell them when they should or should not wear gloves."

Workers observed erred on the side of wearing gloves, in part because they don't know if the patient may be infectious.

"To me, that sounds like a conflation of standard precautions — treat everybody the same — and contact precautions — you wear gloves for everything," Williams says. "They've merged the two things, and said that means you wear gloves with everybody because that's what we do when we know somebody has an infection." ■

GAO Report Takes OSHA to Task on Healthcare Violence

In response, OSHA considering a rule on healthcare violence

The Occupational Safety and Health Administration (OSHA) has ineffective enforcement programs for issuing citations and following up warnings for workplace violence in healthcare, the U.S. General Accountability Office (GAO) reports.[1]

While the number of inspections involving workplace violence in healthcare facilities has increased, a relatively small percentage of these inspections resulted in general duty clause citations related to workplace violence, the government watchdog group found. From 1991 through October 2014, OSHA issued 18 general duty clause citations to healthcare employers for failing to address workplace violence. Seventeen of these citations were issued from 2010 through 2014. These citations were issued in about 5% of the 344 workplace violence inspections of healthcare employers that were conducted from 1991 to April 2015, the GAO reported.

The GAO recommended that OSHA provide additional information to assist inspectors in developing citations, develop a policy for following up on hazard alert letters concerning workplace violence hazards in health care facilities, and assess its current efforts. OSHA agreed with GAO's recommendations and stated that it would take action to address them, including considering whether a separate standard is needed on workplace violence in healthcare.

As has been previously reported, healthcare workers suffer much higher rates of violent injuries than the overall work sector. According to the GAO, in 2011 nonfatal workplace violence injuries in healthcare were an estimated 40,000 incidents.

"The full extent of the problem and associated costs is unknown," the GAO noted in the report.

That's due in part to the fact that such injuries are not always reported by healthcare workers. OSHA has increased its education and enforcement efforts to help employers address workplace violence in healthcare facilities, but GAO identified the several areas for improvement.

While OSHA does not have a standard on preventing workplace violence, the agency can use its general duty clause to protect workers from violence. The GAO reported, however, that OSHA regional offices lack specific criteria to enforce violence prevention under the general duty clause. Specific examples of issues that have been or could be cited are needed, the GAO recommended.

OSHA inspectors can also issue warnings about violence prevention, but employers can essentially ignore these "hazard alert letters," and OSHA does not follow up to see if corrective actions were taken. As a result, identified hazards may persist, the GAO found.

"OSHA has not fully assessed the results of its efforts to address workplace violence in healthcare facilities," the GAO concluded. "Without assessing these results, OSHA will not be in a position to know whether its efforts are effective or if additional action may be needed to address this hazard."

In response to the report, OSHA said it agreed with GAO recommendations and is taking action. The agency is in the process of revising its enforcement directive and developing a training course to further assist inspectors, OSHA stated in letter that is included in the GAO report. OSHA also plans to include standardized procedures for following up on hazard alert letters in the revised enforcement directive. OSHA stated that it intends to find a cost-effective way to gauge its enforcement efforts to determine whether additional measures, such as developing a workplace violence prevention standard for healthcare workers, are necessary. In addition, OSHA stated that the agency is reviewing past inspections that resulted in citations or hazard alert letters to determine what measures may improve the process, the GAO reported. ■

REFERENCE

1. GAO: Workplace Safety and Health: Additional Efforts Needed to Help Protect Health Care. April 14, 2016: http://bit.ly/1Nzd8Ti.

COMING IN FUTURE MONTHS

- Lotion policy for dermatitis caused by frequent handwashing
- Alcohol hand rubs and the pregnant HCW
- The Joint Commission addresses bullying in healthcare
- Safe lifting: Is it an oxymoron in your hospital?

CE INSTRUCTIONS

To earn credit for this activity, please follow these instructions:

1. Read and study the activity, using the provided references for further research.
2. Scan the QR code to the right or log on to AHCMedia.com, then select "MyAHC" to take a post-test.
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 test, a credit letter will be emailed to you instantly.
5. Twice yearly after the test, your browser will be directed to an activity evaluation form, which must be completed to receive your credit letter.

CE QUESTIONS

1. The National Institute for Occupational Safety and Health criteria for initiating a health hazard evaluation includes being contacted by at least how many employees?

A. 1
B. 2
C. 3
D. 4

2. According to the Association of Occupational and Environmental Clinics, an asthmagen does not cause asthma, but can trigger symptoms in those with pre-existing asthma.

A. True
B. False

3. Of some 400 attendees at a recent summit of the American Association of Critical-Care Nurses, what percentage said they have appropriate staffing at least three-quarters of the time?

A. 64%
B. 33%
C. 14%
D. 8%

4. Effective needlestick reduction strategies in low-incidence hospitals in the EXPO-STOP study included prevention through:

A. data-driven communication.
B. immediate root cause investigation.
C. engagement of staff on all levels.
D. all of the above.

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.