



HOSPITAL EMPLOYEE HEALTH



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AHC Media

OSHA targets high-injury hospitals

'It's a new day for OSHA in health care'

Hospitals, be forewarned: the Occupational Safety and Health Administration is preparing an enforcement push targeting the high rate of injuries in health care.

Rather than allowing the National Emphasis Program in nursing homes to expire as scheduled in April 2015, OSHA informed its regional offices that the agency will “soon issue updated guidance that instructs OSHA offices to allocate enforcement and other resources to additional inpatient healthcare facilities, such as nursing homes and hospitals that have occupational illness and injury rates above the industry average.”

OSHA cites the hazards of musculoskeletal disorders from lifting patients or residents, exposures to

tuberculosis, bloodborne pathogens, workplace violence, and slips, trips and falls. The additional OSHA guidance was pending as this issue of *HEH* went to press.

The OSHA announcement comes as injuries in health care remain persistently high. In 2013, the most recent data released by the U.S. Bureau of Labor Statistics showed that one in five injuries were in the health and social services sector. State-run nursing homes had the highest injury and illness rate among all worksites — higher even than police and firefighters.

Hospitals had an overall injury rate about twice as high as the private industry average—5.9 injuries per 100 full-time workers, compared with 3.1 for private industry. In a recent report on an injury surveillance

HOSPITALS HAD AN OVERALL INJURY RATE ALMOST TWICE AS HIGH AS THE PRIVATE INDUSTRY AVERAGE—5.9 INJURIES PER 100 FULL-TIME WORKERS, COMPARED WITH 3.1.

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EDITOR: Michele Marill, (404) 636-6021, (marill@mindspring.com).

EXECUTIVE EDITOR: Gary Evans, (706) 310-1688, (gary.evans@ahcmedia.com).

CONTINUING EDUCATION AND EDITORIAL DIRECTOR: Lee Landenberger

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EDITORIAL QUESTIONS:
For questions or comments call
Gary Evans at (706) 310-1688.

program, the National Institute for Occupational Safety and Health found a rate of patient handling injuries of 11.33 per 10,000 worker-months, with the greatest rate of injury occurring while repositioning patients in bed.¹ (See related article on page 76.)

The mismatch between enforcement and injuries has been most glaring in patient handling. About 11,000 nurses have musculoskeletal disorder injuries each year that are serious enough to cause them to miss work, a number that has budged little in the past three years. OSHA has never issued a general duty clause citation related to patient handling injuries in a hospital.

That seems likely to change, especially since OSHA has successfully used the “general duty clause” of the Occupational Safety and Health Act to cite nursing homes for injuries due to resident lifting.

“The groundwork has been laid in the skilled nursing industry,” says **Lori Severson**, CSP, Vice President and Senior Loss Control Consultant at Lockton Companies, a Kansas City-based insurance brokerage firm. Severson has worked with nursing home clients who were cited by OSHA for failing to have an adequate program to prevent musculoskeletal disorder injuries.

“It’s a new day for OSHA in health care,” she says.

The high cost of patient handling injuries

Pressure is growing on hospitals to address patient handling injuries, but progress toward safer lifting varies greatly.

Risk managers named patient management (including handling

and lifting) as their number one concern and reported that patient handling results in the highest average workers’ compensation claims in a survey of 44 hospital systems by Aon, a global risk management consultant and insurance broker.²

“We were able to identify that the average indemnity paid for patient handling was far and away higher than all other causes of loss,” says **Martha Bronson**, ASA, MAAA, associate director and actuary for Aon in Philadelphia.

The average cost per claim — \$15,800 for patient handling claims — was calculated from five years of loss data, she says. Patient handling represented one-third of all claims, she says.

The costs should be a concern of hospital leadership, as well as for risk managers, she says.

“There’s so much they’re able to do to prevent or mitigate these types of claims,” she says.

Yet one-fourth of the respondents (26%) said their hospitals did not have a safe patient handling program. Of those with a program, 88% said they were concerned about sustaining the program and 12% were not satisfied with the program at all. None said they were fully satisfied with their safe patient handling program.

Funding is often cited as an obstacle to investing in patient handling equipment and training, but the Aon survey found that was not a major concern. Some 88% of risk managers said they had adequate funding.

No written policy at many hospitals

Many hospitals are beginning to respond to the annual toll of patient

handling injuries. A survey of 88 Massachusetts hospitals found that about half of the hospitals with safe patient handling programs developed them in the past four years.

Yet one-third (34%) of the Massachusetts hospitals did not have a written safe patient handling policy, and one in five (19%) did not have a written policy or a committee working to prevent patient handling injuries.

Hospitals are accustomed to considering patient mobility as a patient safety issue, but haven't put the same emphasis on worker safety, says **David Wegman**, MD, MSc, professor emeritus of the Department of Work Environment at the University of Massachusetts Lowell and chair of the Massachusetts Hospital Ergonomics Task Force.

"I don't think we will have progress until it becomes intuitive that the benefits outweigh the cost — that you can save money by preventing injuries," he says. "It's a well-known conundrum in preventive medicine."

The survey revealed gaps that could affect the success of safe patient handling programs. While mechanical lifts were common in the medical/surgical units of acute care hospitals (90% of hospitals), they were less likely to be found in other units, such as the emergency department (59%), intensive care unit (33%), and the operating room (54%).

Only half of the hospitals had provisions for maintenance in their safe patient handling policy. About one in five (18%) offered safe patient handling training only upon hire.

Hospitals are evolving in the development of their safe patient handling programs, says **Angela Laramie**, MPH, epidemiologist and program coordinator with the Massachusetts Department of

Public Health Occupational Health Surveillance Program.

"We started with thinking about patient handling mostly in the inpatient med-surg units," she says. "Now we're really thinking about functional mobility across all areas of service within the hospital."

ANA standards gain traction

Finding a path forward to implement safe patient handling has become easier. OSHA provides extensive resources on safe patient handling on a special website (<http://1.usa.gov/1K8kBKg>). Ten states have laws or regulations that require health care facilities to have a safe patient handling program.

A year ago, the American Nurses Association released national standards and an implementation guide for safe patient handling (<http://bit.ly/1GjCHsT>).

ANA surveyed the purchasers of the standards and found most sought to strengthen or validate their existing programs, says **Jaime Dawson**, MPH, senior policy analyst at the ANA in Silver Spring, MD. Following the standards produced immediate results for about two-thirds of those responding to the survey. They reported reduced health care worker injuries, positive patient outcomes, and reductions in injury-related costs, Dawson says.

"Safe patient handling requires a culture change and culture change takes a long time, but we are seeing progress," she says. The ANA is continuing to explore how safe patient handling is being implemented, through focus groups, interviews and other data, she says.

Increasingly, safe patient handling is coming to the forefront. The

Massachusetts Hospital Ergonomics Task Force was succinct in its first of 14 recommendations: "Massachusetts hospitals should implement comprehensive and sustainable SPH programs to minimize manual lifting and mobilization and provide the patient handling equipment needed to protect workers and patients."

Other recommendations encourage the Massachusetts Department of Public Health to provide additional resources to hospitals and convene meetings to enable hospitals to share ideas. The task force also said SPH should be a part of health care worker education and facility design.

The Massachusetts Nurses Association continues to push for a legislative mandate.

In the meantime, the task force report provides important momentum, says **Christine Pontus**, MS, RN, COHN-S/CCM, associate director for health and safety for the MNA in Canton and a member of the task force.

"We've got to move this issue the best way we can," she says. "It's just taken far too long."

REFERENCES

1. Goma AE, Tapp LC, Luckhaupt SE, et al. Occupational traumatic injuries among workers in health care facilities — United States, 2012-2014. *MMWR* 2015; 64:405-410.
2. Aon Risk Solutions. Health Care Workers Compensation Barometer. December 2014: <http://bit.ly/1KDIMOA>.
3. Massachusetts Department of Public Health Occupational Health Surveillance Program. Moving into the future: Promoting safe patient handling for worker and patient safety in Massachusetts hospitals: Report of the Massachusetts Hospital Ergonomics Task Force. 2014: <http://1.usa.gov/11ekUng>. ■

Could a focus on patient safety drive adoption of lifting and handling programs in health care?

For altruistic nurses and tight-fisted CEOs, patient safety may be the tipping point

There are many barriers to getting safe patient handling equipment at the bedside when needed, but you may not have considered that the altruistic nature of nurses could occasionally be one of them. Nurses may be reluctant to leave patients in certain situations, perceiving that their immediate need to get to a bedside toilet, for example, leaves little time to get lifting equipment in the room.

“Nurses are quite self sacrificing and they always put the patient first,” says **Heather M. Monaghan**, MHSc, RN, president and CEO of Sarasota, FL-based Visioning HealthCare Inc., a consulting firm that deals with safe patient handling as part of an overall culture of safety.

“If the patient needs to get to the bedside commode quickly, then they will manually transfer them there because they don’t want the patient too have an embarrassing episode.”

Unfortunately, that very scenario has resulted in injury as nurses and their health care colleagues continue to be in harm’s way when manually lifting or moving a patient population that has both high acuity and obesity. According to a scathing report on National Public Radio (NPR) — which cited many accounts of nurses being injured trying to manually move patients — a nurse called for a four-person lift team to help get a 300-pound patient onto a bed pan. Only one staff member showed up and the patient was getting desperate.

“[The nurse] worried that they couldn’t safely handle the patient. But they also knew if they didn’t act quickly the patient would soil himself, ‘which would humiliate him,’” NPR reported,

quoting the nurse as follows.¹ “So, as the helper pulled the patient’s shoulder and hip, ‘I’m pushing on the other side, one hand on his back and one hand to slide a bedpan underneath him. And it’s really hard. He’s having pain from his chest tubes, he’s short of breath, he’s panicking, he’s saying, ‘Hurry, hurry.’” The helper was almost as frenetic, “saying, ‘Are you ready yet? Have you got the pan in place?’ Because we’re both straining trying to hold him in place and do the maneuvering that’s necessary for this procedure.”

The two were able to get the bedpan under the patient in time. But a couple of days later, the nurse could hardly walk, NPR reported. The nurse missed months of work, eventually retiring at 57 because she didn’t want to work in pain. Such cases are all too familiar, unfortunately, but some hospitals still take some convincing that patient safe handling equipment is a cost-effective investment.

“The evidence is so strong — it’s like do cigarettes cause lung cancer? But there are still people who smoke,” Monaghan says. “We shouldn’t need to keep making the business case; the facts are there. But we do, because each hospital has to look at the financial [impact].”

To cite but one recent example, the federal Occupational Health Safety Network recently reported that of all patient handling injury reports collected, 62% included data on the use of lifting equipment. Of those, 82% of the injuries occurred when lifting equipment was not used.² (*See HEH June 2015, page 69.*) While preventing nurse injuries and reducing

compensation claims and lost workers is one clearly defined aspect of the equation, the patient safety issues may ultimately be the tipping point for more widespread adoption and routine use of lifting equipment.

As evidence accumulates that handling and lifting equipment is actually safer for patients, health care workers, and more importantly, hospital administrators may be more receptive to viewing the equipment as a necessary component of clinical care. If so, the altruistic nature of nurses could motivate them to use the lifts and safe handling equipment as much for patients as themselves.

“We’re starting to see a connection between the use of equipment and improved patient outcomes,” Monaghan says. “I think that’s where we are going to get a much stronger buy-in from the hospitals, from executive leadership, from the nurses and aides. Nurses are like doctors — they don’t want to do their patients any harm. Now we are finding that we can reduce pressure ulcers using the equipment, it’s more comfortable for patients, less painful and reduces falls. So I think the culture of safety needs to be focused on the patient, and the nurse hopefully will follow.”

As it currently stands, too often safe handling programs lose momentum after the initial excitement of bringing the equipment in and receiving some basic training from the vendor.

“We revisit the same things all the time,” she says. “What I am finding with safe patient handling is that hospitals are purchasing the equipment and they’re having the vendors come in

to do the training — which is fine. But the culture — a culture of ‘ownership’ is not there. So the programs are failing.”

Monaghan cites four key ingredients for the kind of a safety culture needed to sustain the gain and ensure equipment is used appropriately and as often as needed: effective leadership; ongoing education and competency assessment; personal safety; and accountability.

“It dawned on me that it is not just about engaging staff — though that is a vital part of changing the culture,” she tells *HEH*. “It is looking at it on a much more global perspective within the organization.”

Monaghan recently presented her safety culture concept at a conference in Glendale, AZ, called “Safe Patient Handling and Mobility—Transforming Clinical Practice.”

Accountability must be shared across the board, not just on the frontlines by the patient bedside, but in the boardrooms of hospital administration, she emphasizes. With committed and effective leadership at the helm, a culture of safety can be realized that is non-punitive, encouraging staff to ask questions and giving them the power to intervene to stop unsafe practices. In addition, “near misses” should be reported and analyzed to assess the need for change.

“You also have to make sure that there is enough equipment and the way to do that is a very thorough risk assessment of the patient group and what the staff perceive as their needs,” she says.

Of course, purchasing the right type of equipment for the patient population is critical, but even then surprisingly common barriers to use remain.

“It has to be accessible,” Monaghan notes. “I went to a hospital where you had to unlock two doors to get to the one and only lift. Nobody is going to use that lift — it takes too much time and you have to find the key.”

Indeed, failure to use purchased lifting equipment is an abiding frustration in many safe patient handling programs. Your program should include elements to overcome the common barriers to proper compliance, says **Terry Snyder**, MBA, senior ergonomics consultant with P.S. Associates in Sudbury, MA.

“There are many reasons why people don’t use [the equipment] and a lot of them are good reasons,” says Snyder. “It’s not the right equipment. It’s been a while since they’ve had training. They aren’t comfortable with it.”

As with any quality improvement process, safe patient handling needs sustained attention, she says. “You need constant reinforcement so this doesn’t die out,” she says.

Snyder cites the following barriers to having a successful safe patient handling program and strategies to overcome them:

Frontline workers weren’t included in identifying the equipment needs.

The first rule of change management is to get the users involved in the solution, says Snyder. Confidential surveys are helpful to obtain feedback on patient handling practices and obstacles. “The frontline people know the job the best, and their support is needed to make the program work,” she says.

Staff didn’t have the right kind of training. Users need more than a one-time demonstration by a vendor. They need someone who can reinforce the proper use and benefit of the equipment, says Snyder. “Super-users” or safe patient handling champions are co-workers who provide peer-to-peer coaching at the bedside, identify and resolve any problems, and encourage their co-workers to use the equipment.

The right kind of equipment and supplies weren’t available. Do you have lifts but no available slings? Portable equipment that haven’t been recharged? To sustain your program,

you need to maintain your equipment and supplies. You also need equipment that addresses the range of your patients’ needs, including repositioning a patient in bed, moving a patient between a bed and chair, and safely assisting semi-dependent patients to stand or walk.

There wasn’t enough time.

Surveys often reveal the perception that using a lift takes too much time in the high-pressure environment of health care. Yet gathering co-workers to help lift takes time, too. As people become more comfortable with the equipment, the time it takes to use it greatly decreases. Management needs to reinforce the importance of safe patient handling for both the patient and care providers, says Snyder. “It is important to have commitment as high up in the organization as possible, to let staff know that this is what’s expected,” she says.

Employees were worried that the patient or the patient families would not like the equipment. Patients often feel more secure when they are in a lift rather than being manually lifted, says Snyder. Safe patient handling is part of a patient safety plan to avoid pressure ulcers and reduce patient falls. And increasingly, patients come into the hospital already familiar with mechanical lifts, she says. “A lot of the patients who are not weight-bearing are using these products at home,” she says. “They will expect hospitals to have them as well.”

REFERENCES

1. Zerwdling D. Hospitals Fail To Protect Nursing Staff From Becoming Patients. NPR Feb. 4, 2015: <http://npr/113xF4o>
2. Centers for Disease Control and Prevention. Occupational Traumatic Injuries Among Workers in Health Care Facilities — United States, 2012–2014. *MMWR* 2015;64(15):405–410. ■

California staffing law reduces occ injuries, nurses in other states fighting for similar laws

NY nurses hit the streets demanding lower nurse-patient ratios

A 2004 California law mandating specific nurse-to-patient staffing standards in acute care hospitals has significantly lowered job-related injuries and illnesses for both registered nurses and licensed practical nurses, researchers report.

The need for higher nurse-to-patient ratios is typically invoked as a patient safety issue, and research supports that claim. Studies have found an increased risk of patient infections, mortality, and worker burnout as the number of patients assigned a given nurse increases. For example, a study that analyzed survey data from more than 7,000 registered nurses from 161 hospitals in Pennsylvania linked nurse understaffing to burnout and increased rates of catheter-associated urinary tract infections and surgical site infections.¹ Another study found that every additional patient assigned to a nurse over four resulted in a 7% increase in mortality for all patients under that nurse's care.²

That said, there is not a clear consensus that the California law has improved patient outcomes, which was its primary intent. However, the recently published study is believed to be the first to evaluate the effect of the California staffing law on health care workers.³

The researchers estimated that the California law has resulted in an average annual reduction from 176 injuries and illnesses per 10,000 registered nurses to 120 per 10,000 — a 32% cut. For licensed practical nurses, the average yearly change went from 244 injuries per 10,000 to 161 per 10,000 — a 34% reduction.

“We were surprised to discover such

a large reduction in injuries — these findings should contribute to the national debate about enacting similar laws in other states,” says lead author **J. Paul Leigh**, PhD, a professor of public health sciences at the Center for Healthcare Policy and Research at UC Davis in Sacramento.

California is the only state in the country with mandated minimum nurse-to-patient ratios, though other states have enacted requirements for staffing committees or public disclosure of staffing levels. (*See related story, page 79.*) California's mandated nurse-to-patient ratios include:

- intensive care units 1:2:
- labor/delivery 1:3
- pediatrics 1:4
- medical–surgical 1:5
- psychiatric 1:6

According to Leigh, some hospitals have argued against extending the law to other states because of the increased costs of additional nursing staff.

“Our study links the ratios to something just as important — the lower workers' compensation costs, improved job satisfaction and increased safety,” he says.

Using data from the U.S. Bureau of Labor Statistics, Leigh and colleagues compared occupational illness and injury rates for nurses during several years before and after implementation of the new law. The change in injury rates among hospital nurses after implementation of the law in California was compared to the change in 49 other states and Washington, D.C. combined. This “difference-in-differences” methods separated the effects of California's staffing mandates, though only for a few

years after it was enacted.

Leigh speculated that the lower rates of injuries and illnesses to nurses could come about in a number of ways as a result of improved staffing ratios. Back and shoulder injuries could be prevented, for instance, if more nurses are available to help with repositioning patients in bed. Likewise, fewer needle-stick injuries may occur if nurses conduct blood draws and other procedures in a less time-pressured manner. The investigators recommended additional research using more recent data to see if the reductions in injury and illness rates held up over time.

“Even if the improvement was a temporary or ‘halo’ effect of the new law, it is important to consider our results in debates about enacting similar laws in other states,” he says. “Nurses are the most recognizable faces of health care. Making their jobs safer should be a priority.”

The research findings should embolden ongoing efforts to enact “safer” nurse-patient ratio laws in other states.

“The staffing problem in our hospitals has gotten worse lately,” says **Kathy Santoiemma**, RN, a nurse at Montefiore Medical Center's New Rochelle (NY) Hospital. “The hospital practice of understaffing is almost a daily problem for us and it must be addressed.”

Santoiemma was one of some 1,000 members of the New York State Nurses Association (NYSNA), who recently rallied at the state capitol in Albany to support a proposed state law that would mandate “safe” nurse-patient ratios to

Nurses association pushes for federal, state nurse-to-patient ratio laws

ANA cites 'continued failure of Congress' to take federal action

When health care employers fail to recognize the association between RN staffing and patient outcomes, laws and regulations become necessary, the American Nursing Association argues.

An existing federal regulation (42CFR 482.23(b)) requires hospitals certified to participate in Medicare to “have adequate numbers of licensed registered nurses, licensed practical (vocational) nurses, and other personnel to provide nursing care to all patients as needed.” “This nebulous language and the continued failure of Congress to enact a federal law — ‘The Registered Nurse Staffing Act’ — has left it to the states to ensure that staffing is appropriate to meet patients’ needs safely,” the ANA states on its website. (<http://bit.ly/1vmQMzL>)

According to the ANA, state staffing laws tend to fall into one of three general approaches:

- Require hospitals to have a nurse-driven staffing committee which creates staffing plans that reflect the needs of the patient population and match the skills and experience of the staff.
- Mandate specific nurse-to-patient ratios in legislation or regulation.
- Require facilities to disclose staffing levels to the public and/or a regulatory body.

The ANA supports a legislative model in which nurses are empowered to create staffing plans specific to each unit. “This approach aides in establishing staffing levels that are flexible and account for changes; including intensity of patient’s needs, the number of admissions, discharges and transfers during a shift, level of experience of nursing staff, layout of the unit, and availability of resources (ancillary staff, technology etc.),” the ANA states.

The ANA summarizes the situation as follows:

- Thirteen states currently have addressed nurse staffing in hospitals in law or regulations: CA, CT, IL, MN, NV, NJ, NY, OH, OR, RI, TX, VT, and WA. Of these, seven require hospitals to have staffing committees responsible for plans and staffing policy: CT, IL, NV, OH, OR, TX, WA. In addition, five states require some form of disclosure and/or public reporting of staffing levels: IL, NJ, NY, RI, VT.
 - California is the only state that stipulates in law and regulations a required minimum nurse-to-patient ratio to be maintained at all times by unit.
 - Massachusetts passed a law specific to the ICU requiring a 1:1 or 1:2 nurse-to-patient ratio depending on stability of the patient.
 - Minnesota requires that a chief nursing officer or designee develop a core staffing plan with input from others. The requirements are similar to Joint Commission standards.
 - New Mexico charged specific stakeholder groups to recommended staffing standards to the legislature in 2012. The department of health is to collect information about the hospitals that adopt standards and report the cost of implementing an oversight program.
 - North Carolina requested a study on the use of mandatory overtime as a staffing tool in 2009, but no subsequent action taken.
 - Washington, D.C. and Maine passed legislation in 2004, but the staffing mandate was later removed in both states. ■

protect patients from falls, healthcare-associated infections (HAIs) and other adverse events. Of course, protecting nurses is part of the equation, but the NYSNA has primarily seized on the political clout of patient safety in lobbying for the law.

“Staffing is an issue across the board, not just for our nurses but

for our patients,” says **Tara Martin**, senior communications manager for the NYSNA. “The primary function of a nurse is to be an advocate for the patients. When you’re understaffed you have a problem because you are not giving your full attention to every patient that needs it. So it creates an unsafe work environment for the nurses

and also [endangers] patients. Our primary focus has always been to make sure our patients are safe. With the current staffing levels that are happening across the state, patients are definitely at risk.”

The Safe Staffing for Quality Care Act would set enforceable nurse-to-patient ratios in New York health

care facilities. The law would require minimum staffing levels ranging from one nurse per patient in trauma emergency, per two patients in ICUs, per three patients in the emergency department, per four patients on medical/surgical wards and per five patients in rehab/subacute. The bill has passed one committee, but must go through another committee to reach the floor for a full vote. “We actually have momentum on this bill and we hope to have a vote by the end of the session, which is in June,” Martin says.

The nurses cite clinical studies that have consistently shown that safe staffing improves patient outcomes and even saves money.

“In study after study, unsafe staffing levels lead to worse health outcomes, including shock, cardiac arrest, and hospital-acquired pneumonia,” says

Martha Wilcox, an RN at Sullivan County (NY) Public Health. “We know that a safe and reliable healthcare system of the future cannot be created unless we empower our frontline providers of care, and give them what they need to get the job done. We need hospital management to take safe staffing seriously.”

However, hospital associations and other groups are arguing against such laws, saying they need staffing flexibility and mandated nursing levels could undermine their economic stability and cause cuts in other areas. The Greater New York Hospital Association (GNYHA) warned that staffing mandates will force hospitals to lay off other members of the care team and close nursing units because of a shortage of appropriately trained nursing staff. The nurses risk making their situation

worse by “draining the resources necessary to provide support staff, licensed practical nurses, nurse assistants, and other types of professional staff, including physical therapists, clinical pharmacists, and phlebotomists,” the GNYHA said, adding that the extra work would then fall to nurses.

REFERENCES

1. Cimiotti JP, Aiken LH, Sloane DM, et al. Nurse staffing, burnout, and health care associated infection. *AJIC* 2012;40:486-490.
2. Aiken, LH, Clark SP, Sloane DM, et al. Hospital Staffing and patient mortality, nurse burnout and job dissatisfaction. *JAMA* 2002; 288:16:1987-1993
3. Leigh JP, Markis CA, Losif AM, et al. California’s nurse-to-patient ratio law and occupational injury. *Int Arch Occup Environ Health* 2015; 88(4):477-484 ■

Norovirus may spread by airborne route — are current precautions enough to protect HCWs?

Outbreaks cause staff illness, costly furloughs

Noroviruses — a leading cause of highly disruptive gastroenteritis outbreaks that often include infected health care workers — may transmit through the air, meaning currently recommended contact precautions may not be completely effective at stopping spread from patients to staff, researchers report in a fascinating new study.¹

“The measures applied in hospital settings are only designed to limit direct contact with infected patients,” says **Caroline Duchaine**, PhD, lead author and professor at Université Laval’s Faculty of Science and Engineering and researcher at the Quebec Heart and Lung Institute (IUCPQ) Research Centre. “In light of our results, these rules need to be reviewed to take into account the possibility of airborne

transmission of noroviruses. Use of mobile air filtration units or the wearing of respiratory protection around patients with gastroenteritis are measures worth testing.”

Though self-limiting and rarely fatal, norovirus can spread between patients and health care workers, leading to furloughed staff and costly closings of entire units for environmental cleaning and disinfection.

In one norovirus outbreak in a hospital, the attack rates were 13.9% among patients and 29.5% among health care workers.² Lost productivity costs due to health care workers on sick leave totaled \$12,807 dollars. The CDC recommends that ill personnel be excluded from work for a minimum of 48 hours after the resolution of

symptoms. Once personnel return to work, the importance of performing frequent hand hygiene should be reinforced, especially before and after each patient contact.

In addition to being one of the leading causes of outbreaks in hospitals and long-term care settings, norovirus strikes community settings like day care and schools and, of course, is an infamous stowaway on luxury cruises. It is estimated that norovirus may cause more than 23 million gastroenteritis cases every year in the United States, representing approximately 60% of all acute gastroenteritis cases. Norovirus causes some 90,000 emergency room visits and 23,000 hospitalizations for severe diarrhea among children under the age

of five each year in the U.S., the CDC reports.³

Typically, transmission occurs through exposure to direct or indirect fecal contamination found on fomites, by ingestion of fecally-contaminated food or water, or by exposure to aerosols of norovirus from vomiting persons. In a rather staggering observation, the CDC reports that someone infected with norovirus can shed “billions” of viral particles, but it takes as few as 18 viral particles to infect another person.

If norovirus infection is suspected, adherence to PPE use according to contact and standard precautions is recommended for individuals entering the patient care area (i.e., gowns and gloves upon entry) to reduce the likelihood of exposure to infectious vomitus or fecal material, the CDC recommends. Use a surgical or procedure mask and eye protection or a full face shield if there is an anticipated risk of splashes to the face during the care of patients, particularly among those who are vomiting.

“It is possible for norovirus to spread through aerosolized vomit that lands on surfaces or enters a person’s mouth then he or she swallows it,” the CDC notes. “There is no evidence showing that people can get infected by breathing in the virus.”⁴

A team of Canadian researchers set out to provide that evidence, suspecting that the explosive nature of the outbreaks could mean another route of transmission.

“Our [airborne] hypothesis came from the fact that norovirus infections are very difficult to contain,” Duchaine says. “This virus is very contagious and in some occupational settings, hundreds of people will catch the virus even if they were never in direct contact with sick patients.”

Duchaine and colleagues conducted the study at eight hospitals and long-term care facilities during norovirus

gastroenteritis outbreaks. They gathered air samples at a distance of one meter from patients, at the doors to their rooms, and at nursing stations. Noroviruses were found in the air at six of the eight facilities studied. The viruses were detected in 54% of the rooms housing patients with gastroenteritis; 38% of the hallways leading to their rooms; and 50% of nursing stations. Virus concentrations ranged from 13 to 2,350 particles per cubic meter of air. Although norovirus is an intestinal pathogen, noroviruses could be transmitted through the airborne route and subsequently, if inhaled, could settle in the pharynx and later be swallowed, the authors theorized.

“We decided to study the viral load in health care settings while patients were actively sick with norovirus infections,” Duchaine says. “[We found] it can be inhaled through the mouth or the nose. If the particle is big enough — too big to enter the lungs — it impacts on the surface of the nose, trachea, mouth, and natural clearance would bring it to be swallowed. This is the route we think may be happening, although it is not proven.”

In vitro studies were performed to evaluate the preservation of the aerosolized norovirus infectious potential, revealing that the virus can withstand aerosolization with no significant loss of infectivity.

“We tested the resistance of a murine norovirus to aerosolization — this includes drying — and this virus is very resistant to desiccation,” she says. “The literature states that this virus can survive for long periods on surfaces.”

Though the particles could be inhaled and swallowed to find their way to the gut, the researchers dismissed the notion that infected patients would actually be exhaling an enteric virus.

“The main hypothesis is from fecal matter or vomiting,” Duchaine tells *Hospital Employee Health*. “We did not

take breath samples.”

Duchaine and colleagues note that — in addition to vomiting — norovirus aerosols can result from the viral resuspension from fomites, flushing toilets, and the actions of healthcare workers.

“It is well described that vomit and diarrhea contain large quantities of noroviruses,” she says. “When sick persons vomit or excrete diarrhea, aerosols are produced. Droplets will likely dry and form what is called droplet nuclei. Water evaporates and the content of the droplet will concentrate to form a smaller aerosol that will remain airborne. Our hypothesis is that such aerosol particles could [then] be inhaled and swallowed.”

The authors observe that the detection of significant concentrations of norovirus genomes in the air of corridors and nursing stations suggests that the virus can remain suspended for prolonged periods. If airborne spread is occurring, the typically recommended measures of contact isolation, frequent hand hygiene with soap and water, and environmental disinfection would not be sufficient to stop all routes of transmission.

The study provides original quantitative data regarding the airborne dissemination of norovirus in healthcare facilities, and documents for the first time widespread dissemination of norovirus in the air of healthcare facilities during gastroenteritis outbreaks, the authors note.

“Considering that an average human breathes approximately six liters of air per minute, a healthcare worker could inhale up to 60 copies of human norovirus during a 5-minute stay in the room of a symptomatic patient. For some individuals, this quantity could be sufficient to cause the disease,” they conclude.

REFERENCE

1. Bonifait L, Charlebois R, Vimont A, et al. Detection and quantification of airborne norovirus during outbreaks in healthcare facilities *Clin Infect Dis*. Advance Access published April 21, 2015.
2. Zingg W, Colombo C, Jucker T, et al. Impact of an outbreak of norovirus infection on hospital resources. *Infect Control Hosp Epidemiol* 2005 Mar;26(3):263-267.
3. Centers for Disease Control and Prevention. Healthcare Infection Control Practices Advisory Committee (HICPAC). Guideline for the Prevention and Control of Norovirus Gastroenteritis Outbreaks in Healthcare Settings, 2011.
4. CDC. Norovirus. Clinical overview. <http://www.cdc.gov/norovirus/hcp/clinical-overview.html> ■

Health care stress: It's rampant, but employee health interventions supported by scant evidence

Survey: 86% of HCWs report being stressed or 'highly stressed'

Stress reduction is a key employee health challenge, and intuitively one would think that any of the common approaches would help de-stress health care workers. It turns out to be surprisingly difficult to quantify the effects of the various interventions.

It's widely known that stress can affect the cardiovascular system, raising blood pressure and the risk of heart attack. What's less discussed is that stress affects an astonishing number of body systems and organs, so many that the American Institute of Stress concludes, "it's hard to think of any disease in which stress cannot play an aggravating role or any part of the body that is not affected."

To make matters very much worse, health care workers are the most stressed-out employees in the country. A recent survey of 3,211 workers found health care workers at the very white-knuckled pinnacle, with an astounding 86% of workers reporting that they feel "stressed" (69%) or "highly stressed" (17%).¹

"Often this is because healthcare workers face high expectations and they may not have enough time, skills and social support at work," the authors of a recent Cochrane review report.² "This can lead to severe distress, burnout or physical illness. In the end, healthcare workers may be unable to provide high

quality healthcare services. Stress and burnout can also be costly because affected healthcare workers take sick leave and may even change jobs."

It goes without saying that stressful, burned-out nurses may put themselves and their patients at greater risk than those who are coping better and using interventions to reduce stress.

Unfortunately, when subjected to the rigorous standards of a Cochrane review, the actual evidence supporting the various approaches is scant. Researchers found that cognitive-behavioral training as well as mental and physical relaxation all reduce stress moderately. Changing work schedules can also reduce stress, but other organizational interventions have no clear effects.

The review evaluated how well person-directed or organizational interventions prevent stress or burnout in health care workers. The authors included 58 studies that included 7,188 participants. The person-directed interventions included cognitive-behavioral training and mental and physical relaxation that varied from music-making to massage. The organizational changes aimed at increasing social support or changing stressful work methods or work schedules.

The person-directed interventions, in general, decreased stress and burnout

levels. Teaching healthcare workers cognitive-behavioral methods of stress management (i.e., mindfulness, self-talk) was 13% better than no intervention at all in seven studies, the authors report. Unfortunately, it is unclear if this reduction is large enough to be experienced as a significant improvement by an individual healthcare worker suffering from work-related stress, they note. The results were similar when cognitive-behavioral training was combined with relaxation. In addition, when a cognitive-behavioral training course was compared to other training unrelated to stress, the stress levels were similar after both conditions. This could mean that the effect of a stress management course is not very specific.

Also, mental and physical relaxation led to a moderate reduction in stress levels compared to no intervention in 17 studies.

The authors found fewer studies on organizational interventions, and surprisingly the introduction of a social support program did not lead to a considerable reduction of stress levels in workers at less than six months follow-up in four studies with 2,476 participants. However, one study with a longer follow-up did show an effect of organizing social support. It may be that, in the other studies, follow-up

time was too short for an effect to show up, the authors reported. Three studies tried to improve psychosocial working conditions with worker participation but none found a considerable effect on stress levels. Only shorter or interrupted work schedules reduced stress levels in two studies in physicians.

“Even though organizational interventions are considered preferable, there is little evidence to support most of these,” they concluded. “[We] recommend conducting evaluations of organizational interventions that better focus on improving specific working conditions associated with stress. [C]ognitive-behavioral training as well as mental and physical relaxation all moderately reduce stress. Changing work schedules can also reduce stress, but at this point there is no clear evidence that other organizational interventions are effective in reducing stress.”

Given these rather discouraging results, we reached out via email to lead author **Jani H. Ruotsalainen**, MSc, managing editor of the Cochrane Occupational Safety and Health Review Group at the Finnish Institute of Occupational Health in Kuopio.

HEH: Do you have any opinion on why the data do not show a greater benefit to cognitive-behavioral training (CBT) as well as mental and physical relaxation to reduce stress?

Ruotsalainen: “Given the nature of systematic reviews in trying to overcome the problems of individual studies and trying to extract an overall ‘truth’ regarding the magnitude of effect for a particular intervention, such as how much on average does CBT reduce stress, it would be going beyond the data to conjecture how and why the effect size is what it is. Of course we can make educated guesses based on obvious shortcomings in the included studies, such as problems in keeping intervention and control groups truly

separate and following up people for long periods of time after the intervention. But unfortunately this type of research is not the best way to answer any questions beginning with why.”

HEH: Based on your findings, would it be fair to say it is better to have such programs than not?

Ruotsalainen: “Absolutely. We can say without any doubt that healthcare workers’ stress can be reduced with CBT and relaxation programs. However, to say if they would help in any given particular context, one would first need to know the current situation, i.e. magnitude/prevalence of the stress/burnout problem. If, for example, a particular hospital/care facility had tackled the issue with vigour and had already achieved significant results over time then it would be silly to expect much further improvement.”

HEH: Would the moderate benefits reported be worth the resources needed for such programs — in other words, would they be cost-effective?

Ruotsalainen: “Generally speaking, I would be willing to bet that CBT and relaxation interventions would not be very expensive to set up and therefore even a modest improvement would mean a healthy cost/benefit ratio. Sadly very few stress management intervention studies address cost-effectiveness directly so anything I state on this is conjecture and not based on the review.”

HEH: You and co-authors conclude

that shorter vs. longer working schedules can also reduce stress — can you elaborate on that point in terms of what changes have shown effective in stress reduction?

Ruotsalainen: “[One study] in 2011³ compared a work schedule with weekend breaks to a continuous schedule among intensive care staff, and another in 2012⁴ compared a two-week with a four-week schedule among resident physicians. We combined the results of the two studies because the interventions had a similar objective and they both measured emotional exhaustion as an outcome, even though it was measured in different ways. The results showed that the shorter schedules reduced stress.”

REFERENCES

1. The Hiring Site. America’s most stressful jobs: What are they? Feb. 10, 2014: <http://cb.com/1gmxuR7>
2. Ruotsalainen RH, Verbeek JH, Mariné A, et al. Preventing occupational stress in healthcare workers. *Cochrane Occupational Safety and Health Group*. April 7, 2015 <http://bit.ly/1Q9LDpj>
3. Continuity of care in intensive care units: A cluster-randomized trial of intensivist staffing. *Am J Respir Crit Care Med* 2011;184(7):803-808.
4. Lucas BP, Trick WE, Evans AT. Inpatient Rotations on Unplanned Patient Revisits, Evaluations by Trainees, and Attending Physician Burnout: A Randomized Trial *JAMA*. 2012;308(21):2199-2207. ■

COMING IN FUTURE MONTHS

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CNE QUESTIONS

- 1. According to the U.S. Bureau of Labor Statistics, in 2013 hospitals had an overall injury rate almost twice as high as the private industry average, with how many injuries per 100 full-time workers?**
 - A. 5.9
 - B. 3.1
 - C. 8.4
 - D. 6.5
- 2. California is the only state in the country with mandated minimum nurse-to-patient ratios. Which of the following nurse-to-patient ratios is required for psychiatric units?**
 - A. 1:3
 - B. 1:4
 - C. 1:5
 - D. 1:6
- 3. In an air sampling study, noroviruses were found in the air at which health care locations?**
 - A. patient rooms
 - B. hallways
 - C. nursing stations
 - D. all of the above
- 4. What percentage of surveyed healthcare workers said they were "highly stressed?"**
 - A. 19%
 - B. 29%
 - C. 69%
 - D. 17%

CNE 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.