FOR MORE THAN 28 YEARS

# Hospital Employee Health®

THE PRACTICAL GUIDE TO KEEPING HEALTH CARE WORKERS HEALTHY

AHC Media LLC

## IN THIS ISSUE



**Financial Disclosure:**
Editor Michele Marill, Associate Publisher Coles McKagen, Consulting Editor MaryAnn Gruden, and Senior Managing Editor Gary Evans report no consultant, stockholder, speaker's bureau, research, or other financial relationships with companies having ties to this field of study.

**FEBRUARY 2010**
**VOL. 29, NO. 2 • (pages 13-24)**

# Empowered OSHA targets airborne infectious disease hazards

*Record keeping to include tracking of MSDs on 300 log*

Expect more regulation. Like a sleeping giant that awakens with a roar, the U.S. Occupational Safety and Health Administration is moving forward with new initiatives, including the first steps toward a possible airborne infectious diseases standard and renewing proposed record-keeping rules on musculoskeletal disorder (MSD) injuries.

In fact, in a web-based address, U.S. Labor Secretary **Hilda L. Solis** highlighted airborne infectious diseases as one of the top concerns in her new regulatory agenda. "The lack of compliance with everyday infection control procedures has received increased focus because of the 2009 H1N1 pandemic. OSHA is interested in whether current procedures are adequate enough to prevent infections among exposed workers," she said.

"Reducing workers' risk of exposure of health and safety hazards is a priority of my administration," Solis added. OSHA will hire 100 additional inspectors in the fiscal year 2010 budget, she said.

As of mid-December, OSHA had not yet cited any hospitals for failing to use N95 respirators to protect health care workers caring for 2009 H1N1 patients. But OSHA had conducted "several" inspections, Solis reported. "OSHA has moved aggressively to address the hazards of H1N1 pandemic influenza in the workplace," relying on existing standards and the General Duty Clause, said **Jordan Barab**, then acting head of OSHA, in a separate web-based chat. (OSHA chief David Michaels was confirmed by the U.S. Senate in December.)

OSHA's decision to enforce the recommendation from the Centers for Disease Control and Prevention for health care workers to use N95s when caring for patients with 2009 H1N1 has been contentious, reviving the long-standing divisions between infection control professionals and industrial hygienists on this issue. Infection control practitioners believe surgical masks provide adequate protection and wrote a letter to President Obama asking for a halt to the OSHA enforcement. **(See related article on p. 17.)**

Although the National Institute for Occupational Safety and Health

(NIOSH) is not a regulatory agency, it also has an ambitious agenda to address health care hazards. In a statement published in the NIOSH online newsletter, *enews*, NIOSH director **John Howard** stated, "I do not think we can return to an era when a health care worker's exposure to transmissible diseases such as influenza can be merely considered 'diseases of life' for which a health care worker 'assumes the risk' when he or she offers their labor to a health care employer." **(See the full statement on p. 15.)**

New OSHA initiatives may mean hospitals will provide more resources to employee health professionals, says **Sandra Domeracki Prickitt**, RN, FNP, COHN-S, executive president of the Association of Occupational Health Professionals in Healthcare and coordinator of Employee Health Services at Marin General Hospital/Novato Community hospitals in California.

The greater emphasis on enforcement under the Obama administration is not a surprise, she says. "I think that's what everyone expected," she says.

Barab, who will remain as deputy assistant secretary for OSHA, helped promulgate the ergonomics standard when he was previously at OSHA from 1998 to 2001, and he previously worked in health and safety with the AFL-CIO and the American Federation of State, County, and Municipal Employees.

"This White House is concerned about worker safety and health," says **Bill Borwegen**, MPH, health and safety director for the Service Employees International Union (SEIU). "I know it might be a departure from the previous administration, but we think it's a very healthy development and we applaud the leadership of the Obama administration in protecting health care workers."

OSHA said it plans to issue its Request for Information related to airborne infectious diseases in the *Federal Register* in March. "There is evidence that a lack of adherence to voluntary infection control recommendations has resulted in the transmission of disease to workers. OSHA is seeking information on the extent to which voluntary recommendations are being followed and whether mandatory regulations would be more effective," the agency said (www.dol.gov/regulations/factsheets/osha-fs-airborne.htm).

Specifically, the agency said it will seek information on:

- studies and data describing the nature and scope of occupational exposure and illness from airborne infectious diseases;
- the efficacy of current control measures for reducing occupational exposures;
- components of an effective infection control program;
- information to help decide whether or not to pursue rulemaking.

The California Aerosol Transmissible Diseases standard may provide a template for an OSHA standard. Cal-OSHA was able to achieve support for standard from both the California Hospital Association and labor unions representing health care workers. While it requires fit-tested N95 respirators (or greater protection) for health care workers

**Hospital Employee Health**® (ISSN 0744-6470), including **The Joint Commission Update for Infection Control**, is published monthly by AHC Media LLC, 3525 Piedmont Road, Building Six, Suite 400, Atlanta, GA 30305. Telephone: (404) 262-7436. Periodicals Postage Paid at Atlanta, GA 30304 and at additional mailing offices.

**POSTMASTER**: Send address changes to ***Hospital Employee Health***®, P.O. Box 740059, Atlanta, GA 30374.

**Subscriber Information**

**Customer Service: (800) 688-2421 or fax (800) 284-3291. Hours of operation: 8:30 a.m.-6 p.m. Monday-Thursday, 8:30 a.m.-4:30 p.m. Friday EST. E-mail: customerservice@ahcmedia.com. Web site: www.ahcmedia.com.**

**Subscription rates:** U.S.A., one year (12 issues), $499. Add $17.95 for shipping & handling. Outside U.S., add $30 per year, total prepaid in U.S. funds. Discounts are available for group subscriptions, multiple copies, site-licenses or electronic distribution. For pricing information, call Tria Kreutzer at 404-262-5482. Missing issues will be fulfilled by customer service free of charge when contacted within 1 month of the missing issue date. **Back issues**, when available, are $78 each. (GST registration number R128870672.)



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 15 nursing contact hours using a 60-minute contact hour.

Provider approved by the California Board of Registered Nursing, Provider #14749, for 15 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.



caring for patients infected with a novel pathogen, it also temporarily allows fit-testing to occur biannually rather than every year. That provision was based on the premise that future research will clarify fit-testing issues and it automatically expires in 2014.

### OSHA shifts on MSD tracking rule

Meanwhile, the rulemaking to renew a requirement to track MSDs on the OSHA 300 log represents a reversal of Bush administration policy. The 2001 revised record-keeping rule would have required a separate column for work-related MSDs, but OSHA first delayed enforcement of the provision, then eliminated it.

The problem: How to define MSDs, a point of controversy in the development of the ergonomics standard, which was rescinded by Congress in 2001. "OSHA found that no single definition of 'ergonomic injury' was appropriate for all contexts," the agency said when it suspended the MSD reporting requirement.

This administration doesn't share that hesitation. However, Solis said the possible return of the MSD reporting rule is not a first step toward a new ergonomics standard. (OSHA is prohibited from issuing a standard that is "substantially the same" as the one rescinded by Congress under the Congressional Review Act.)

"MSDs continue to be a major problem for American workers, but at this time, OSHA has no plans for regulatory activity," Solis said in the web chat.

Yet it signals that the Obama administration is willing to take on the issue of ergonomic hazards, says **Brad Hammock**, Esq., workplace safety compliance practice group leader at Jackson Lewis LLP in the Washington, DC, region office.

"It's a significant development because it reignites the debate about musculoskeletal disorders, how you define them and what you should do about them, how you should classify them and characterize them," he says. "They're not backing down from ergonomics."

In fact, Barab acknowledged that OSHA will explore its options for addressing ergonomics, including industry-specific standards such as a patient handling rule. "[W]e will intensify the process of determining how we are going to address ergonomics," he said.

*(Editor's note: Additional information on the OSHA and U.S. Department of Labor regulatory agenda is available at www.dol.gov/regulations.)* ■

# Safety and health workers: Rethinking old assumptions

*(Editor's note: This column by **John Howard**, MD, director of the National Institute for Occupational Safety and Health, is reprinted from the NIOSH online newsletter,* enews.)

It is no easy task to be an occupational safety and health practitioner in the health care industry. Longstanding and deeply embedded assumptions are always difficult to shake, even when the need to do so becomes increasingly apparent.

People in health care — including me — often take offense when we are said to belong to an "industry." In my career as a physician in an acute care hospital setting, I have heard the words "profession" or even "calling" used to describe people who work in health care. And, depending on how remote, or how dangerous the part of the world where you deliver health care, health care workers are sometimes described as "noble" or "self-sacrificing."

Indeed, these descriptions are flattering and are, in some cases, accurate, but we must be careful when society characterizes routine work in any industry as "self-sacrificing." This characterization places workers engaged in such work outside the protections of the governmental worker safety and health paradigm that we apply to other all other industrial sectors where labor is exchanged for wages.

Providing occupational safety and health protections for health care workers is complex. In health care, some people have described a tension between caring for the patient and caring for the worker who cares for the patient. Health care has a long history of resolving that conflict entirely to the advantage of the patient without a rigorous consideration of all alternative ways to protect both the patient and the worker. The adoption of the Bloodborne Pathogens Standard http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051 in 1991 marked a real turning point in efforts to protect health care workers and patients.

**Hazards in the Work Setting**

We have known for years about the hazards that health care workers face every day:

- Exposures to formaldehyde, anesthetic gases, and other potentially toxic chemicals;

• Risks for acute or chronic injuries from physical exertion such as turning and lifting patients, or standing for hours at a time in the operating room;

• Potential for work-related assault and injury from human agents in stressful situations or in public-access work areas, such as belligerent psychiatric patients, irate family members, or even gang members who engage in "shoot-outs" in hospital emergency rooms.

All of these hazards, and more, characterize the risks associated with working in the industrial sector called health care.

Health care workers themselves have become more aware of these hazards. As awareness, education and research on preventing these hazards from maturing into injuries and illnesses have increased, so have the demands of health care workers for less "self-sacrifice" rhetoric and more straight talk about hazard identification, risk assessment, and risk management. Self-sacrifice is indeed admirable and many health care workers often go far beyond the duties of their job to help patients and their loved ones.

However, on a routine basis in a $2 trillion industry, it should not be the operating principle if we are to create a sustainable health care workforce for the 21st century.

**Lessons from 2009 H1N1 Influenza**

And it is important that we use the opportunity of the first influenza pandemic of the 21st century to figure out what attitudes, what policies, what programs and what practical decisions we need to employ to guarantee a sustainable health care work force. To do that successfully, we must confront the last frontier of occupational safety and health in the health care industry — the frontier associated with biological hazards.

Biological hazards include those that are transmissible from patient to health care worker, and from health care worker to the health care worker's unborn child, spouse, partner, children, friends, and others. Transmissible diseases are new to the lexicon of all occupational safety and health professionals, but I encourage all occupational safety and health practitioners to learn about transmissible diseases not only in the health care workplace, but also in nonhealth care workplaces.

The list of such agents is long and growing, and yet we in occupational safety and health know very little about such agents. In fact, we have often been led to believe that understanding the transmission of such transmissible agents requires a medical degree. That simply is not the case in the context of carrying out our duties as safety and health professionals.

Influenza — that virus that has plagued mankind since the dawn of the human race — that highly changeable virus with an 8-gene team that frequently trades and acquires new gene players—that virus that has outwitted the smartest virologists in the world — to survive through thousands of years — is upon us again. A fourth-generation relative of the virus that caused the terrible 1918 global pandemic appeared in the spring of 2009 and is now spreading throughout the world. In June, the World Health Organization declared the H1N1 influenza a pandemic.

**Pivotal Documents**

On Oct. 14, 2009, the U.S. Centers for Disease Control and Prevention (CDC) updated its Interim Guidance on Infection Control in Healthcare Settings. The Guidance recommends that a robust hierarchy of controls — engineering, administrative, and personal protective equipment — be used to protect health care workers from the biological hazards associated with exposure to influenza (www.cdc.gov/h1n1flu/guidelines_infection_control.htm). Regarding personal protective equipment, the guidance continues to recommend that health care workers in close contact with patients suspected or confirmed to have H1N1 influenza wear fit-tested disposable N95 respirators.

The recommendation is based on scientific findings that the influenza virus can be spread by small particles or aerosols generated by an infected patient that can remain suspended in the air and that a surgical mask does not provide equivalent protection for the health care worker to a fit-tested respirator. The CDC Guidance, together with the recently adopted California Aerosol Transmissible Disease Standard www.dir.ca.gov/dosh/Swine Flu/Interim_enforcement_H1N1.pdf, are pivotal documents in the effort to promote a sustainable 21st-century health care work force.

Currently, it is anticipated that there may be a shortage in the supply of disposable N95 respirators for health care settings trying their best to follow the CDC Guidance. NIOSH has developed a Respirator Information Clearinghouse to connect those who need to obtain respirators with those suppliers who have respirators available. As new information is obtained, NIOSH will update the clearinghouse site. I encourage you to visit this site and mark the page for ongoing reference. (www.cdc.gov/niosh/npptl/topics/respirators/disp_part

/RespSource.html.)

Where occupational safety and health practice in the health care industry goes from here when the current pandemic has passed us by, remains to be seen. A far more virulent influenza, so-called "avian" influenza or H5N1 influenza, may present us with even greater challenges. For this reason, I do not think we can return to an era when a health care worker's exposure to transmissible diseases such as influenza can be merely considered "diseases of life" for which a health care worker "assumes the risk" when he or she offers their labor to a health care employer.

We need to care for the sick and, at the same time, we need to care for those who care for the sick. Our attitudes, our policies, our laws, and our practices need to more clearly and emphatically reflect this duality in the 21st century delivery of health care. For further information, I invite you to use our resources for preventing work-related injuries and illnesses in health care (www.cdc.gov/niosh/topics/healthcare/), and to become familiar with NIOSH's research program portfolio in health care and social assistance (www.cdc.gov/niosh/programs/hcsa/).

As always, we invite your partnership under the National Occupational Research Agenda (NORA) to stimulate, plan, conduct, and support the research necessary for meeting the challenges of the 21st century. ■

# Politics blurs the science of respiratory protection

*Two studies at center of debate over N95s*

*Surgical masks are no worse than respirators in protecting health care workers from influenza.* Is this statement based on science — or politics?

*In the absence of adequate science-based evidence, respirators should be used by health care workers having close contact with patients with a novel influenza strain.* Should this policy take into account practical issues, such as cost and supply concerns?

The current pandemic has raised the stakes on a long-simmering dispute between infection control practitioners (who favor the use of surgical masks) and industrial hygienists (who insist that only respirators can be used as personal protective equipment). Two recent studies — one yet unpublished — have added fuel to the debate.

The result is a kind of power struggle. Although the Centers for Disease Control and Prevention issued guidelines calling for health care workers to use respirators when caring for patients with novel H1N1, and the U.S. Occupational Safety and Health Administration directed its inspectors to enforce those guidelines, professional organizations are still arguing the point.

In a Nov. 5 letter to President Obama, the Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), and the Association for Professionals in Infection Control and Epidemiology (APIC) called for an "immediate moratorium" on OSHA enforcement of the respirator guideline. They cited the two studies as evidence that "N95 respirators are not superior to surgical masks in the prevention of transmission of influenza in most patient care settings."

At the same time, **Raina MacIntyre**, MD, MBBS, FRACP, FAFPHM, MAE, PhD, professor of infectious diseases epidemiology at the University of New South Wales in Sydney, Australia, felt the heat of a political response to her scientific findings, which she said do not actually support the use of surgical masks.

## *Ideology and bias?*

MacIntyre presented results to an Institute of Medicine panel that showed respirators were significantly more effective than surgical masks at preventing influenza-like illness and lab-confirmed influenza. Although the IOM panel said it did not consider any unpublished data in its decision to recommend use of respirators rather than surgical masks, MacIntyre received an angry barrage from infection control practitioners, whom she called "highly emotional and entrenched and ideological."

"I have received hate mail accusing me of being on the payroll of 3M [a major respirator manufacturer]. I have been attacked in the most personal way. You have no idea what's gone through my [e-mail] inbox," says MacIntyre, who says she had no agenda when she approached the research and in fact expected to find no difference between the two. "I have many times been surprised by findings and that the answers are not what I expect them to be, but I go with the truth and not political conditions or ideology."

The other paper at issue was published in the *Journal of the American Medical Association*, written by lead author **Mark Loeb**, MD, MSc, FRCPC, director of the infectious diseases department at

McMaster University in Hamilton, Ontario, where he also is professor of pathology and molecular medicine and clinical epidemiology and biostatistics. Loeb found that surgical masks were not inferior to N95 respirators.

"I'm not necessarily in one camp or the other. We did the study because we wanted to ask the question," says Loeb, who also decries the politicization. "There are people who are so biased — one way or the other — that it detracts from moving the field forward."

Loeb takes issue with industrial hygienists who base their position on studies involving inert particles, rather than infectious particles. "What's most important is, 'How do these devices protect health care workers?'"

People who are "dead-set supportive of N95s" aren't looking at the evidence impartially, he contends. "Some people just tend to take whatever data is available and shape it to whatever conclusion they want to see, and I think that's counterproductive," he says.

## N95s reduce flu by 75%

So what do the MacIntyre and Loeb studies say?

The MacIntyre study involved 1,936 health care workers at 24 Beijing hospitals who wore masks, respirators, or no facial protection for four weeks during the winter. Researchers tracked the health care workers for five weeks to detect onset of respiratory illness. The doctors and nurses wore the protection throughout their shifts.

Overall, respirators were 42% more protective than masks, although no statistical difference was found between fit-tested and nonfit-tested respirators. The respirators were associated with a 75% reduction in both flu-like illness and laboratory-confirmed flu.

The control group in the study was not randomized because health care workers in China would object to being told not to wear masks. Therefore, MacIntyre and her colleagues used a convenience sample as a control from hospitals where mask use was not routine.

When a journal reviewer said the control group should be removed because it was not randomized, MacIntyre revised her analysis. The p value was also adjusted to take into account the potential for different rates of infection at different hospitals in the study. The trend remained showing N95 respirators as more protective, but the results lost statistical significance, she says. The new analysis was presented at an IDSA meeting.

"The rates of all outcomes in the control arm were higher than in the surgical or N95 groups, so removing over 500 health workers from the analysis contributed to the p values losing significance," MacIntyre says. "What this means is that the study still shows a likely superiority of N95s, with half the rate of infection compared to surgical [masks], but the study was probably underpowered to pick up statistical significance when we removed the control group."

An analysis including the control group is valid, and the two analyses are simply two different ways of looking at the same evidence, she says.

## Asymptomatic flu with N95s and masks

The Loeb study compared surgical masks and N95 respirators used by 446 nurses at eight hospitals in Toronto. The nurses wore the masks or respirators when caring for patients with febrile respiratory illness. There was no control group in the study.

Loeb and colleagues tested for laboratory-confirmed influenza based on either PCR from "nasopharyngeal and flocked nasal specimens or at least a fourfold increase in serum antibodies to circulating influenza strain antigens." About 30% of the surgical mask group and 28% of the N95 group had been vaccinated against seasonal influenza. The groups were well-balanced in terms of vaccination as well as household exposure to influenza-like illness.

The researchers found a fairly high rate of asymptomatic influenza in both groups — 24% in the surgical mask group and 23% in the N95 group. That represented nonsuperiority of N95 respirators, Loeb concluded.

Eleven of the nurses had influenza-like illness and laboratory-confirmed influenza. Nine of them were in the surgical mask group and two in the respirator group. With a p value of 0.06, this did not meet Loeb's standard of statistical significance of $p = 0.05$. In fact, the difference was "probably more a function of how we defined influenza-like illness," Loeb says.

Interestingly, the study found a substantial amount of 2009 H1N1, although the final serology was completed by mid-May. The novel H1N1 strain was first identified in Mexico in April and was just beginning to circulate in North America. Eight percent of the surgical mask group and 11.9% of the N95 respirator group had serologic evidence of 2009 H1N1 infection. "We suspect

there had been pandemic H1N1 circulating earlier on [than suspected]," Loeb says.

The result also could have been influenced by some cross-reactivity to seasonal strains. Only results related to the seasonal antigens were included in the study, he says.

Everyone agrees that more research is needed on the efficacy of surgical masks and N95 respirators, including their benefits in preventing infection. But in the midst of a pandemic, public policy must proceed.

The Institute of Medicine's stance mirrored what has been known as "the precautionary principle." Respirators should be used "until or unless further evidence can be provided to the effect that other forms of protection or other guidelines are equally or more effective" at protecting health care workers.

The IOM panel noted that it considered the experimental work that compared respirators and surgical masks, not studies on "their effectiveness in the clinical setting due to the fact that the availability of data is quite limited on clinical effectiveness."

That conclusion in favor of respirators was supported by the National Institute for Occupational Safety and Health (an arm of CDC), the American Public Health Association and the American Industrial Hygiene Association (AIHA), as well as labor unions representing health care workers. "We believe that there is clear information, based upon the evidence-based science, that N95 and higher types of respiratory protection provide a superior benefit than surgical masks," says **Steve Derman**, past chair of the Health Care Working Group of AIHA and president of Medishare Environmental Health and Safety Services in Coopertino, CA.

However, the infection control community strenuously argued in favor of practical considerations and questioned the added benefit of respirators. "When you take the body of evidence that is available currently in evaluating whether N95 respirators or surgical masks were appropriate for health care workers, we think the evidence favors surgical masks for routine care of patients," says **Mark Rupp**, MD, president of SHEA and medical director of health care epidemiology and infection control at the University of Nebraska Medical Center in Omaha.

Among the practical considerations: lack of comfort and tolerability, cost, supply, and communication difficulties. The increase in H1N1 vaccination and evidence that 2009 H1N1 has a lower fatality rate than seasonal influenza further fuel their argument.

"We feel very strongly that this is a real waste of resources and it puts an unnecessary burden on the health care system at a time when [hospitals] are already strained," Rupp says.

The American College of Occupational and Environmental Medicine (ACOEM) has been

## Timeline of respirator use in health workers

- **1993:** The Labor Coalition to Fight TB in the Workplace petitioned the U.S. Occupational Safety and Health Administration for a tuberculosis standard.
- **1994**: The Centers for Disease Control and Prevention issues tuberculosis guidelines. Its provisions include the use of respiratory protection when caring for patients with TB.
- **1997:** OSHA proposes a tuberculosis rule that requires an exposure control plan, risk assessment, infection control practices, and respiratory protection.
- **2003:** The outbreak of Severe Acute Respiratory Syndrome in Canada and Asia raises questions about respirator use and fit-testing. Forty-five percent of the cases in Toronto were among health care workers.
- **2003:** OSHA withdraws the proposed TB rule. Health care facilities must continue to follow the respiratory protection standard, which requires annual fit-testing.
- **2004:** An amendment to an appropriations bill (sponsored by Rep. Roger Wicker, R-MS) prohibits OSHA from using federal funds to enforce annual fit-testing.
- **2006:** The SARS Commission report in Canada criticized authorities for failing to adequately protect health care workers. It criticized the failure of Ontario hospitals to provide fit-tested respirators, saying "action to reduce risk need not await scientific certainty."
- **2007:** Renewal of the Wicker Amendment fails. OSHA resumes enforcement of annual fit-testing.
- **2009:** California adopts the first Aerosol Transmissible Disease standard, which calls for respirator use with novel pathogens but allows for bi-annual fit-testing through 2014.
- **2009:** In keeping with recommendations from an Institute of Medicine panel, CDC calls for the use of fit-tested respirators when caring for patients with novel H1N1, but offers flexibility in the case of supply shortages. OSHA announces plans to enforce the CDC guidelines. ■

largely silent on this contentious issue. Occupational medicine physicians differ in their opinions about the need for respirators versus surgical masks, says **Robert K. McLellan**, MD, MPH, FACOEM, chief of occupational and environmental medicine at Dartmouth-Hitchcock Medical Center in Lebanon, NH.

However, ACOEM would like to shift attention to other measures that should be taken to protect health care workers from novel H1N1 and other infectious diseases. For example, through "administrative controls," patients with febrile respiratory illness should be identified swiftly and sick leave policies should encourage ill health care workers to stay at home. Barriers can be used in triage areas to protect workers, and vaccination can reduce the risk of transmission. Ultraviolet germicidal irradiation may have promise in reducing the risk of infectious diseases as well.

"There's been this kind of evolution of the use of respirators where they have taken too much prominence in the world of protecting health care workers," McLellan says.

Health care workers need to be educated about infection control practices and respirator use, he says. Improper use of respirators can actually increase the risk of infection, he adds.

"We're a strong proponent of well-defined infection control policies. Educate, vaccinate, and put in place good infection control policies," says McLellan.

"We need better science on transmission of flu. . . . Let's look at all the issues and problems we have in the use of anything [protective] over your mouth and let's try to push the science of respirators forward," he says.

### Reference

1. Loeb M, Dafoe N, Mahony J, et al. Surgical mask vs. N95 respirator for preventing influenza among health care workers. *JAMA* 2009; 302:1,865-1,871. Published online Oct. 1, 2009 (doi:10.1001/jama.2009.1466). Accessed on December 14, 2009. ■

# Leaky needles raise device supply issue

*HHS bought needles for H1N1 vaccine*

The sharps safety devices provided with the 2009 H1N1 vaccine provoked a flurry of complaints as nurses found them to be difficult to activate, leaky, or too large. Many of those complaints focused on the BD Integra, a retractable needle that has been on the market since 2002. The experience highlights the difficulties inherent in the large government purchase of safety devices that the users are not familiar with, safety experts say.

When the U.S. Department of Health and Human Services promised to provide devices along with more than almost 200 million doses of vaccine, the first question was one of supply. Who could accommodate a surge in manufacturing sufficient to supply a nationwide mass vaccination?

The Biomedical Advanced Research and Development Authority (BARDA) acknowledged this concern when it put out an expedited request for proposals in August, without the usual bidding process: "Manufacturers with a demonstrated manufacturing capacity to produce between 10 to 30 million needle and syringe units per month beginning in September 2009 and lasting until February 2010 will be necessary to meet [U.S. government] needs for 600 million vaccinations."

At the time, it was not clear whether the novel H1N1 vaccine would require two doses or whether adjuvant would be used to extend the supply. As it turned out, one dose is sufficient and no adjuvant is being used.

However, the kits were packaged and shipped with oversized syringes and needles — 21 gauge retractable VanishPoint needles and 5 ml syringes — that were intended for use in mixing adjuvant. Instead, employee health professionals were perplexed when they received needles and syringes that weren't appropriate for routine vaccination. "If we had waited until a decision was made about adjuvants, there's no way we could have gotten them to states in time," says HHS spokeswoman **Gretchen Michael.**

Becton, Dickinson and Company of Franklin Lakes, NJ, the world's largest supplier of needles and syringes, also had the greatest immediate manufacturing capacity. It told BARDA it could supply 15 to 25 million syringes and needles per month. Covidien (formerly Tyco Healthcare), headquartered in Dublin, Ireland, offered capacity of 10 to 13 million units per month. Retractable Technologies of Little Elm, TX, had capacity to produce 10 million a month, ramping up to 30 million per month in about four months. Smiths Medical of St. Paul, MN, had capacity to produce 10 million units.

"We were dealing with enormous quantities," says Michael, who said BARDA was ultimately looking for 200 million syringes. "We did a survey of what was feasible, who were the manufacturers and what was their capacity."

In the fall, concerns began to arise, particularly about the BD Integra. The device requires a half-turn to secure the needle before administration. But some users reported that the needle hub still leaked after turning it.

"You gave the person an injection and you don't know how much they got of the vaccine," says **Bruce Cunha**, RN, MS, COHN-S, manager of employee health and safety at the Marshfield (WI) Clinic.

The BD Integra brochure indicates that activation can occur before or after removing the needle from the patient's arm — a different technique from the VanishPoint, the first retractable device that entered the market. The VanishPoint touts single-handed activation that occurs when the plunger is fully depressed, before it is withdrawn from the patient.

Users complained to the Centers for Disease Control and Prevention that the Integra was too difficult to activate. "We have received reports and questions about ancillary supplies, with the vast majority focusing upon one specific product that providers may not be accustomed to using and which requires a half-twist of the needle to prevent vaccine from leaking," CDC spokesman **Joe Quimby** said in an e-mail response to *Hospital Employee Health*.

As of mid-December, BD had shipped about 100 million syringes and needles, including 13 million of the Integra. "Since the product began shipping for the H1N1 flu vaccination campaign via the U.S. government's distribution channels in October, we have received a small handful of complaints about the BD Integra syringe via our customer complaint process," **Alyssa Zeff**, director of worldwide public relations for BD, said in an e-mail response. "While this number is less than we received during the same time frame last year, we will remain vigilant in assessing customer issues and have taken some additional steps to increase our ability to respond to customers.

"We recognize that personnel giving H1N1 vaccinations may be expected to use a safety-engineered device with which they are not familiar. For that reason, we have developed an online training tool that includes both video and step-by-step printable instructions on how to use each of the BD safety-engineered syringes that the U.S. government is distributing as part of its national flu vaccination campaign."

In fact, users had very little time to get acclimated to the devices. **Emma S. Smith**, RNC, COHN, employee/occupational health coordinator at Mount Nittany Medical Center in State College, PA, received the hospital's first doses of 2009 H1N1 vaccine at 12:30 p.m. on a Friday and was vaccinating employees by 2 p.m. "As I was administering some of the first ones, I recall thinking, 'I don't like these needles,'" she says. "You get used to using a certain device and then you get a different device handed to you. Sometimes there's a learning curve."

At Concord (NH) Hospital, nurses initially also had problems with leakage. One device actually fell apart, says **Anne C. Mills**, RN, MSN, COHN-S, director of Employee Health Services. She contacted her materials management department and they received assistance from a BD representative. She demonstrated the correct use of the device and brought educational materials.

The hospital had no further problems after the training, says Mills. "Some of it is technique, changing the way you've been doing shots for 35 years."

Some users felt the needle device should have been more intuitive. "We're not talking about people who are not normally used to using needles," says Cunha. "It should work as a normal retractable needle."

Marshfield Clinic, which administered more than 8,000 doses, began attaching its own safety needles to the syringes. "They wasted a ton of money," Cunha said of BARDA. "We're all throwing this stuff out, basically. We're just not using it at all here."

*(Editor's note: Information from CDC about the vaccine devices is available at www.cdc.gov/vaccines/ed/ciinc/specialtopics/2009_flu.htm and www.cdc.gov/h1n1flu/vaccination/slv/pdf/2009_H1N1_Influenza_Vaccine_Ancillary_final_11-12-2009.pdf. Information about BD syringes and needles is available at www.bd.com/hypodermic/.)* ■

# WA law pushes hospitals to 'no-lift' status

*Tax credits offset equipment cost*

This month, the nation's most comprehensive safe patient handling law takes its full effect: Hospitals in Washington state must have equipment to reduce injuries by Jan. 31. The state's

Department of Health will enforce the rule through its licensing process.

The law has triggered action. Though a disparity remains between hospitals that eagerly adopted interventions even before the law was passed and those still lagging, there is widespread awareness of the hazards of patient handling, says **Barbara Silverstein**, MSN, PhD, MPH, CPE, research director with the Safety and Health Assessment and Research for Prevention (SHARP) program of the Washington State Department of Labor & Industries in Olympia. (National legislation patterned after the Washington law — the Nurse and Health Care Worker Protection Act — continues to work its way through Congress, with a growing number of sponsors.)

As the first part of an evaluation of the law's impact, Silverstein compared hospitals in Washington and Idaho, where there is no law or regulation related to safe patient handling.

In surveys and focus groups of direct care staff, Silverstein asked, "What does safe patient handling mean to you?" In Idaho, the health care workers mentioned protecting patients from falls or avoiding pressure ulcers. "In Washington, at least there is awareness in terms of staff knowing what safe patient handling means," she says.

It's too soon to know how much equipment was purchased by Washington hospitals or how the law affected workers' compensation claims or injuries. But based on the variable use of tax credits by November, it's clear not every hospital had adopted full-fledged programs.

"The legislature set aside $10 million for hospitals to be able to purchase equipment using that tax credit. That tax credit ends at the end of January 2010. To date, close to $6.8 million has been utilized of these tax credits," Silverstein says. "There are some hospitals that have not used the tax credit at all and others have maxed out on the tax credit."

### *'Really hard to change attitudes'*

Ultimately, what hospitals need is a culture change, says Silverstein. A law can create mandates, and it can jump-start a program, but fundamental change comes from a new mindset for hospital, leadership as well as frontline workers, Silverstein says.

Nursing schools finally have dropped the old body mechanics in favor of safe lifting, and some hospitals have peer leaders who encourage their colleagues to use equipment, she notes. "I think it's still really hard to change attitudes," Silverstein

## CNE *questions*

5. According to Brad Hammock, Esq., the proposed recordkeeping rule to track MSD injuries on the OSHA 300 log indicates that the U.S. Occupational Safety and Health Administration:
A. plans to create an ergonomic standard.
B. plans to create a patient handling standard.
C. is preparing to address the issue of ergonomics
D. isn't sure significant numbers of MSDs are occurring in workplaces.

6. In the controversy about the effectiveness of N95 respirators vs. surgical masks, what is the opinion of ACOEM?
A. There is no difference between N95 respirators and surgical masks.
B. N95 respirators are superior and should be used with novel H1N1.
C. Neither N95 respirators nor surgical masks are sufficiently effective.
D. Other measures, such as administrative and engineering controls, should have greater emphasis in protections of HCWs.

7. When the U.S. Department of Health and Human Services prepared to provide needles and syringes with vaccine deliveries, a major consideration in the purchase was:
A. the devices most commonly used by hospitals and providers.
B. immediate manufacturing capacity.
C. input from frontline health care workers.
D. cost.

8. By Jan. 31, 2010, a safe patient handling law in Washington state required hospitals to:
A. purchase equipment to reduce hazards.
B. evaluate safe patient handling risks.
C. create a safe patient handling task force.
D. establish lift teams for patient handling.

**Answer Key: 5. C; 6. D; 7. B; 8. A.**

## CNE instructions

Nurses participate in this continuing nursing education program by reading the issue, using the provided references for further research, and studying the questions at the end of the issue. Participants should select what they believe to be the correct answers, then refer to the list of correct answers to test their knowledge. To clarify confusion surrounding any questions answered incorrectly, please consult the source material. After completing this semester's activity with the **June** issue, you must complete the evaluation form provided in that issue and return it in the reply envelope provided to receive a credit letter. ■

says, noting that health care workers may say, "I've done this for the last 20 years and I'm still standing."

### *Disciplinary actions*

At Providence St. Peter Hospital in Olympia, that attitude will lead to disciplinary action. One of the first hospitals in the state to adopt safe patient handling technology, Providence St. Peter has tracks for ceiling lifts in almost all inpatient rooms. "At one point, I think we had more ceiling lifts in place than all the other hospitals in Washington state put together," says **Dan Donahue**, MEd, director of employee health and wellness.

Having lifts readily available makes a difference in their acceptance, he says. "We have 21 critical care rooms, and initially we only tracked four of them. No one integrated it into their practice," Donahue recalls.

The hospital then tracked all the rooms, provided training to staff, and established peer leaders who would help their co-workers with the equipment. Four of the rooms have fixed lifts, with a maximum capacity of 600 pounds. The other rooms use portable lifts, one for every five rooms, with a capacity of 475 pounds. "All the sudden, everyone is starting to [use] it," he says.

Hospital leadership supported safe patient handling from the beginning because of its potential to decrease workers' compensation costs and improve productivity and retention of nurses, Donahue says. In 2004, the hospital installed ceiling lifts in the medical-renal floor, the unit with the highest number of patient-days with patients weighing more than 400 pounds. For two years, there was not a single patient handling injury on the floor.

A subsequent reduction in workers' compensation premiums also helped boost the hospital's bottom line, he says.

A strong safe patient handling program also is a valuable tool to recruit and retain nurses, Donahue says. "We had to reduce the physicality of the work so [nurses] won't get injured and they'll stay," he says.

Finding the money for lift equipment — even with tax credits — can pose a challenge for small, rural hospitals. Yet just as with larger hospitals, the savings on workers' compensation premiums can be quite valuable.

"When you think about putting that much money into one piece of equipment, it seems like it doesn't make sense, like it's not a good payout," says **Julie Wehr**, human resources director at Odessa (WA) Memorial Healthcare Center and chair of the hospital's safety committee. "Once you get the good equipment and you start using it, you realize [employees] need it. You realize it isn't something extravagant. It's what's needed to do the job correctly."

Grants or tax credits, which are available in some states, obviously help with the initial investment. But small hospitals do have some advantages when it comes to implementing a safe patient handling program.

At Odessa, which includes a 24-bed hospital, a long-term care facility, assisted living center and clinic, all employees can gather for workshops or training sessions. Leadership is deeply involved in the program and there aren't as many frontline nurses to convince.

The goal: Creating "a mindset that safe patient handling isn't just a good idea, it's the way it's done," says Wehr. Once employees become comfortable with the equipment, they'll use it regularly — even in an urgent situation, she says. ■

## NIOSH to collect data on chem hazards

How widespread are chemical hazards in health care? The National Institute for Occupational Safety and Health (NIOSH) seeks to find out and is proposing an online survey, which would be targeted to members of professional organizations such as the American Nurses Association.

According to NIOSH, the survey will seek information on chemical agents that include aerosolized medications, anti-neoplastic agents,

**COMING IN FUTURE MONTHS**

- Boosting safety for ambulance workers
- Needlesticks and medical students
- The search for a better respirator
- Ergo interventions reduce pain for office workers
- Update on H1N1 protections

chemical sterilants, high-level disinfectants, surgical smoke, and anesthetic gases. It will ask about work practices and exposure controls and will collect information by occupation and by type and size of work setting.

In 2008, a web-based survey of 1,552 nurses conducted by the Environmental Working Group found that 52% have had regular exposure to at least six hazardous chemicals in their workplace for five years or more. There are no regulatory limits or monitoring requirements for the chemical agents. ■

## CNE objectives

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

- **identify** particular clinical, administrative, or regulatory issues related to the care of hospital employees;
- **describe** how the clinical, administrative and regulatory issues particular to the care of hospital employees affect health care workers, hospitals, or the health care industry at large;
- **cite** solutions to the problems faced in the care of hospital employees based on expert guidelines from relevant regulatory bodies, or the independent recommendations of other employee health professionals. ■




**To reproduce any part of this newsletter for promotional purposes, please contact:**
*Stephen Vance*
**Phone:** (800) 688-2421, ext. 5511
**Fax:** (800) 284-3291
**Email:** stephen.vance@ahcmedia.com

**To obtain information and pricing on group discounts, multiple copies, site-licenses, or electronic distribution please contact:**
*Tria Kreutzer*
**Phone:** (800) 688-2421, ext. 5482
**Fax:** (800-284-3291
**Email:** tria.kreutzer@ahcmedia.com

**Address:** AHC Media LLC
3525 Piedmont Road, Bldg. 6, Ste. 400
Atlanta, GA 30305 USA

**To reproduce any part of AHC newsletters for educational purposes, please contact:**
*The Copyright Clearance Center* for permission
**Email:** info@copyright.com
**Website:** www.copyright.com
**Phone:** (978) 750-8400
**Fax:** (978) 646-8600
**Address:** Copyright Clearance Center
222 Rosewood Drive
Danvers, MA 01923 USA