

Hospital Employee Health®

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OSHA aims to reduce sharps injuries among health care workers

Agency trails California in focusing on safer needle devices

Hospital employee health professionals have until Dec. 8 to respond to the U.S. Occupational Safety and Health Administration's (OSHA) request for information (RFI) on engineering and work practice controls that successfully eliminate or minimize contaminated sharps injuries incurred by health care workers on the job.

However, while OSHA touts the RFI as a first step in directly addressing the problem of disease-transmitting needlesticks among workers, other advocates for HCW safety say OSHA already has the information it needs to protect workers from percutaneous injuries (PIs). They also point out that the federal agency lags behind California OSHA, which has taken the lead in revising its state bloodborne pathogens standard to require the use of safer needle devices whenever possible.

Federal OSHA's RFI, published recently in the *Federal Register*, states that "percutaneous injuries continue to be a concern in work settings where employees are exposed to bloodborne pathogens. [OSHA] is considering possible actions that it can undertake to assist in addressing this issue. . . . The information received in response to this notice will be carefully reviewed and will assist OSHA in determining effective approaches to reducing percutaneous injury rates and what role the agency may have in these approaches."¹

OSHA estimates the number of sharps injuries incurred by U.S. HCWs at 600,000 annually, but occupational health experts generally recognize that those numbers are vastly underreported. PIs can cause serious illness or death from bloodborne pathogens such as HIV and hepatitis B and C. Since promulgation of the federal bloodborne pathogens standard in 1991, which requires hospitals and other health care facilities to offer hepatitis B vaccine to employees, HBV infections among HCWs declined from about 5,000 new cases that year to about 800 new infections in 1995, according to OSHA. The incidence rate of hepatitis B infections among HCWs is now lower than the incidence rate for the general U.S. population.

However, PIs continue to be a major occupational health concern. The rapid development of safer needle devices that could prevent or

minimize bloodborne pathogens exposures has spurred HCW unions and other concerned groups and individuals to call for a change in the bloodborne pathogens standard that would require health care facilities to purchase, evaluate, and use the new technologies.

'Systematic' approach planned

Whether the RFI will lead to a revised standard depends upon information submitted to the agency, OSHA officials say. At a recent HCW safety conference focusing on bloodborne pathogens exposures, **Charles N. Jeffress**, OSHA's assistant secretary of labor for occupational safety and health, announced the agency's commitment to reducing needlesticks. (See related story, p. 133.) The RFI is the first step in OSHA's plan to address the problem systematically, he said.

In releasing the request, Jeffress noted that OSHA has received numerous suggestions for reducing needlestick injuries. "To determine the best strategies, we must begin by gathering information systematically to find out what measures are effective in the workplace," he says.

The RFI specifically seeks information on strategies that have been implemented successfully in the work environment for eliminating or minimizing contaminated sharps injuries, and particularly on the use of safer medical devices designed to limit injury risks. The phrase "safer medical devices" means "the wide variety of implements designed to reduce the risk of needlesticks and other percutaneous injuries through such measures as substitution (as in the use of a blunt cannula with a prepierced septum for intravenous administration of medication), modification of the device to reduce the hazard (as with a blunt suture needle), or incorporation of safety features (as with a retractable-needle syringe)," the RFI states.

OSHA also is interested in successful PI prevention programs that integrate the use of safer medical devices, safer work practices, elimination of needles and other sharps in certain instances and procedures, focused intervention in high-injury areas, specialized training, and other elements. (See specific questions, p. 131.)

Elise Handelman, RN, MEd, COHN-S, director of OSHA's office of occupational health nursing, says the agency is trying to ascertain the prevalence of needlesticks. "One of the big problems is underreporting," she says. "We believe needlesticks are widespread, and we're trying to get data on that."

In requesting information on preventing PIs, OSHA is "casting a wide net," Handelman explains. "We want to know what works. The question we're asking is, 'What's the best way to approach reducing needlesticks? Is it [safer] devices? Is it getting employee input? Is it making sure employees are trained properly? Is it redesigning work processes to eliminate the need for needles?' This is not an issue for which we have a lot of hard research, so we're trying to get more data on what works."

Has OSHA heard it all?

However, international sharps safety expert **Janine Jagger**, PhD, MPH, says OSHA already has all the information it needs to take action on promoting safer device technologies to prevent needlesticks, but thus far has failed to do so.

"I've already said a thousand times what I've had to say," says Jagger, director of the International Health Care Worker Safety Research and Resource Center at the University of Virginia in Charlottesville. Jagger developed and coordinates the Exposure Prevention and Information Network (EPINet) data collection system for identifying and assessing injury-causing needle and sharps devices. "I don't have anything new to provide to OSHA that's not available to them already. I don't think anyone will have anything to say that OSHA hasn't heard already."

OSHA could have a significant impact on the rapid implementation of safety devices in health care facilities by looking for those devices during inspections, but "so far they haven't done it," she states. A change in the agency's inspection criteria would go a long way toward getting hospitals to recognize that implementation of safety devices "is not just a mere product choice like any other."

If the agency's RFI leads to incorporating additional inspection criteria aimed specifically at safer devices, then the effort will be worthwhile, she adds.

"Asking for information is one thing, but doing something with it is entirely different," Jagger says. "OSHA has done good things for health care worker safety in general but has done very little in terms of promoting safer technologies to prevent needlesticks. They can make a big difference here, and I view this announcement as positive. But I won't view it optimistically until the first sign of turning information into action."

Handelman says OSHA could take any of several actions, including changes in the bloodborne

OSHA questions address sharps injury prevention

Commentors urged to describe strategies

The U.S. Occupational Safety and Health Administration's request for information on engineering and work practice controls that successfully eliminate or minimize contaminated sharps injuries incurred by health care workers on the job includes 16 key questions to provide a basis for response, but commentors are encouraged to address any aspects of percutaneous injury (PI) prevention strategies they consider pertinent.

For complete details on each question posed, see the full document.¹ The key issues are:

1. What is the type, size, and employment of your facility? How many of those employees have the potential to sustain a sharps injury, and what are their job classifications?
2. Do you have a surveillance system for tracking PIs? If so, does it track PIs other than those recorded on the OSHA 200 log?
3. What is the total number of potentially contaminated PIs that have occurred in your facility in the past year and previous years?
4. What is the injury rate from potentially contaminated sharps in the past year and previous years?
5. What methods and criteria are used to evaluate the effectiveness of existing exposure controls?
6. Has any type of integrated PI prevention program been established to reduce injuries? If so, describe structure, content, results, problems and/or successes.
7. To what extent have devices designed to reduce PIs been adopted in your facility?
8. On what basis are decisions made in your workplace concerning selection of safer medical

devices? Include design and performance criteria, how PI data are used, input from device users, costs, and other factors.

9. Have safer medical devices been readily accepted and correctly used when provided?
10. What provisions are made to ensure adequate training and education in the use of safer devices and/or safer work practices?
11. How effective are safer medical devices and/or safer work practices in reducing PI rates?
12. Has use of safer devices/and or safer work practices in any way affected patient care delivery?
13. Based on observations in your workplace and your knowledge from other sources, describe any obstacles encountered relative to selection, purchase, and effective implementation of safer medical devices in the workplace, along with comments detailing successful and/or unsuccessful methods of overcoming those obstacles.
14. Provide information on costs associated with implementing safer devices and any savings resulting from their use, as well as on methods for calculating costs and savings.
15. Describe any problems associated with sharps disposal containers, as well as successful and/or unsuccessful measures undertaken to correct those problems.
16. Based on experience in your workplace and your knowledge from other sources, what are the most effective means of preventing needlesticks and other PIs? Explain the basis for your opinion and provide any supporting evidence.

Reference

1. Department of Labor, Occupational Safety and Health Administration. Occupational exposure to bloodborne pathogens: Request for information. 63 *Fed Reg* 48,250-48,252 (Sept. 9, 1998). ■

pathogens standard, changes in enforcement, changes in outreach, or changes in training for compliance officers.

"The plan will be based on the information we get," she says.

Whatever course of action OSHA eventually chooses, the federal agency will be lagging behind California OSHA (CalOSHA), which presently is in the final stages of revising its state

bloodborne pathogens standard to mandate the use of new technology designed to prevent sharps injuries.

CalOSHA's actions have been spurred in no small part by passage of a state bill last August — the first such state law in the nation — that requires health care employers to make safer needle devices available to HCWs. At press time for this issue of *Hospital Employee Health*, it was not

known whether California Gov. Pete Wilson would sign or veto the bill.

Nevertheless, **Len Welsh**, JD, MPH, special counsel to CalOSHA, tells *HEH* that the legislation "basically tells us to do what we're already doing, which is adopt a standard like the one we're already working on."

If the bill becomes law, it would set an Aug. 1, 1999, deadline for adoption of a revised standard, but Welsh says he's confident that CalOSHA will have a new standard on the books well before that date. Action on a revised standard was accelerated "due to a tremendous outpouring of interest in having this attended to expeditiously," he says.

A state advisory board of labor, management, and infection control professionals came to an "unusual consensus that enabled us to move forward a lot more rapidly than we usually manage to do," he explains. Similar to the federal standard after which it was modeled, the present California standard merely mentions self-sheathing needles as an example of an engineering control for preventing injuries.

"It leaves everyone in a quandary as to what they're supposed to do," Welsh says.

The final draft of a revised state standard includes a three-tiered requirement for the use of needleless systems where available, needle devices with engineered sharps injury protection, and a "catch-all" category for non-needle sharps, such as capillary tubes, with engineered protection.

Welsh says four exceptions to the requirements are included, mainly to assuage industry concerns. The exceptions are: lack of market availability of devices; patient safety considerations; safety performance (when a device marketed for safety doesn't perform as expected); and circumstances in which it is not known whether a device works better or worse at reducing exposure incidents.

In addition to the safer technology requirements, the revised standard will include more detailed criteria for recording percutaneous injury incidents and data about devices that were used.

Welsh says California is the first state to make substantial amendments to its bloodborne pathogens standard. He adds that federal OSHA seems to be headed in the same direction, "but they're going a lot more slowly."

Some activists wonder why CalOSHA is doing more than its federal counterpart to protect HCWs.

"I'm glad there is some life in these federal agencies when it comes to protecting workers, but why is California doing so much more?" asks **William K. Borwegen**, MPH, director of health and safety

for the Washington, DC-based Service Employees International Union (SEIU), which represents about 600,000 HCWs nationwide. "The FDA [Food and Drug Administration] has approved some 250 safer products, and lives could be saved if employers bought this newer generation of devices."

For nearly a decade, SEIU has been pushing CalOSHA for stronger state regulations to protect HCWs. On the federal level, the union has campaigned for OSHA to cite employers for failing to evaluate safer devices and would like to see changes in the federal bloodborne pathogens standard similar to those planned in California.

"We applaud [federal] OSHA's new leadership, but this is just a baby step in the right direction," Borwegen says. "Hopefully, OSHA is just setting the stage here so they have a legal basis for being more aggressive. Health care workers in the other 49 states face the same hazards health care workers in California face. Lives could be saved by buying these safer devices."

[Editor's note: Comments on the RFI should be submitted on or before Dec. 8 in quadruplicate or one original (hard copy) and one diskette in WordPerfect 5.0, 5.1, 6.0, 6.1, 7.0, 8.0, or ASCII to: Docket Officer, Docket No. H370A, Room N-2625, U.S. Department of Labor, 200 Constitution Ave. NW, Washington, DC 20210. Telephone: (202) 219-7894.

Comments of 10 pages or less may be transmitted by fax to (202) 219-5046, provided the original and three copies are sent to the Docket Office thereafter.

Comments also may be submitted electronically through OSHA's Internet site at: <http://www.osha-slc.gov/html/needle-form.html>. Information such as studies and journal articles cannot be attached to the electronic response and must be submitted in quadruplicate to the above address. Those attachments must clearly identify the respondent's electronic submission by name, date, and subject.

For further information, contact Bonnie Friedman, director, OSHA Office of Public Affairs, at (202) 219-8148.

In addition to the Federal Register, the RFI may be accessed on the OSHA Internet site at: <http://www.osha.gov>. Click on "Federal Register," then "date of publication" (Sept. 9), then "1998."]

Reference

1. Department of Labor, Occupational Safety and Health Administration. Occupational exposure to bloodborne pathogens: Request for information. 63 *Fed Reg* 48,250-48,252 (Sept. 9, 1998). ■

Sharps prevention progress slower than expected?

Keynote: 'Lives are being lost every day'

Participants in a recent health care worker safety conference agreed that preventing potentially deadly needlestick injuries among U.S. health care workers must become a top priority for hospitals, government, and medical device manufacturers. However, opinion was divided on how to accomplish that goal and whether enough progress has been made in recent years.

The 1998 Frontline Healthcare Workers Conference, held in Washington, DC, is the third such event presented in the last six years. Like its predecessors, the conference's focus was on preventing sharps injuries and blood-borne exposures to HIV and other pathogens such as hepatitis B and C. In another similarity to past conferences, some participants accused federal agencies of merely paying lip service to needlestick prevention instead of taking direct action to eliminate the conventional needles implicated in high-risk injuries. Those critics also say progress since the previous conference in 1995 has been too slow, allowing workers to contract infections and die from needlesticks.

HIV-positive nurse calls for safer devices

"Lives are being lost every day," says **Lynda M. Arnold**, RN, founder and president of the Norristown, PA-based National Campaign for Health Care Worker Safety and a keynote speaker at the conference. "The message is, we need to do something. There needs to be specific effort and action designed toward implementation of safety devices in health care facilities to help reduce exposures."

Arnold, who contracted HIV from a needlestick injury in 1992, launched her safety campaign three years ago by appealing to the nation's hospitals to use safer intravenous catheters and blood-drawing devices, both of which pose an especially high risk for HIV transmission in percutaneous injuries.

"Now that we have statistical information on the types of devices particularly associated with HIV, we can make significant progress in the use of safety devices, and it's time we do that," she says.

One way to do that is through a national safety alert to warn health care facilities and HCWs of the dangers associated with the use of hollow-bore needles. Arnold says she would like to see the Food and Drug Administration (FDA), a co-sponsor of the Frontline conference, issue an alert promptly.

"That would go a long way in this entire process," she states.

In 1992, the FDA issued a safety alert warning against using hypodermic needles to access intravenous lines, a move intended to prevent injuries related to the practice of "piggybacking" IV lines with needles. Several participants at the 1995 Frontline conference reported that the safety alert had accomplished that goal at their hospitals, but the FDA has issued no subsequent alerts related to other conventional needle devices or sharps and apparently has no current plans to do so.

Nevertheless, a spokeswoman for the FDA maintains that the agency has been "proactive" in helping prevent needlesticks since the 1980s "when transmission of AIDS became a known risk to health care workers."

The FDA has worked with device manufacturers to encourage development of safer products that provide barriers to bloodborne pathogen transmission and has cleared about 250 products with safety features since the mid-1980s, she says.

But officials of the Washington, DC-based Service Employees International Union (SEIU), which represents 600,000 HCWs nationwide, also insist that additional safety alerts are needed to reduce needlesticks.

'Do they not work for the taxpayers?'

"Do they work only for the manufacturers? Do they not work for the taxpayers? They've spent all their time approving products, but they can't put out a one-page alert to the nation's health care workers to let them know these products even exist," says **William K. Borwegen**, MPH, SEIU's occupational safety and health director.

A conference participant, Borwegen says the event was "like *deja vu* all over again. It's not clear to me whether you can measure any difference since the last one."

Speaking at the conference, SEIU's secretary-treasurer **Betty Bednarczyk** says one HCW per week eventually will die from HIV exposures occurring today. "In one hospital alone where SEIU represents the workers, five workers have

Needle devices just part of larger injury picture

Examine multiple causes, conference speaker says

While safer needle devices remain the focus of efforts to prevent percutaneous injuries that could transmit HIV and other bloodborne pathogens, a speaker at the recent Frontline Healthcare Workers Safety Conference in Washington, DC, emphasizes the need to investigate multiple causes of needlestick incidents.

Scott Deitchman, MD, supervisory medical officer in the HIV activity branch of the National Institute for Occupational Safety and Health (NIOSH), an arm of the U.S. Centers for Disease Control and Prevention, says safer devices are only a part of preventing accidents.

"I don't want to minimize the importance of safer devices, but they fit into a larger environment," he says. He lists three concepts that lead to a broader approach:

1. "Accidents are not caused by a single event; they're caused by a chain of circumstances," he maintains.

For example, "Jane Doe," an HCW at San Francisco General Hospital, became infected with HIV from an intravenous needle she had withdrawn from a patient in the patient's room. She was on the 11th hour of a 12-hour night

shift, in a room so small that moving around was difficult, and the sharps disposal box was located in the bathroom instead of near the patient's bed, he points out.

"The focus should not be just on the needle and [thinking] if the hospital had been using a safety needle, it wouldn't have happened," Deitchman says. "It wasn't just the needle. The sharps disposal box wasn't where it should have been, she was probably more tired than usual, and the small room made it awkward to move around."

2. Injury incidents aren't caused by rare events. "They show you the potential dangers of your normal everyday procedures. Nothing that happened that night was itself out of the ordinary, except that night all of the events linked up to produce an unusual outcome," he says.

3. Because incidents have multiple causes, no single solution is guaranteed to prevent all of them, although some interventions, such as safer needle devices and disposal boxes, definitely reduce the odds.

Deitchman says this approach "encourages people to look at causes, at the entire incident, not just the type of needle involved, but at the job being done and the circumstances that might have set up that person for an accident." Only then can effective changes be made to prevent needlestick injuries, he says. ■

occupationally contracted HIV from needlestick injuries," she says.

Safer needle technology that could prevent such injuries exists today, "but we have big corporations that make needles that won't aggressively market their safer products or develop the best designs, hospitals that won't buy or even evaluate them, and regulatory agencies that — to be blunt — basically look the other way," Bednarczyk says.

OSHA to gather needlestick information

However, an official with the U.S. Occupational Safety and Health Administration (OSHA), another conference co-sponsor, announced plans to publish a formal request for information (RFI) on needlestick prevention in the *Federal Register*. Indeed, several weeks after the conference, OSHA made good on its promise with a notice asking for information on successful strategies for minimizing sharps

injuries, particularly related to the use of safer needle devices. (See cover story, p. 129.)

Charles N. Jeffress, the agency's assistant secretary of labor for occupational safety and health, put it to conference attendees this way: "What works? This is a chance for you to tell us. Which strategies are making a difference at your hospital, your nursing home, your clinic? I am committed to finding ways to reduce needlesticks among health care workers."

Responses to the RFI will determine whether OSHA might revise the bloodborne pathogens standard to include requirements for using newer, safer needle technology in health care institutions, a move Arnold would like to see.

"Over the past few years, there has been an enormous interest in looking at high-risk types of injuries and what we can do to prevent them, but unfortunately there is still a lot more work to be done," she says.

Much of that work needs to be done by individual HCWs, says **Murray Cohen**, PhD, MPH, CIH, chairman of the Atlanta-based Frontline Healthcare Workers Safety Foundation Ltd., an education and research group that organized and sponsored the conference.

“Health care workers need to be much more directly involved both in recognition of the hazards and the risks, and in efforts to prevent needlestick injuries,” he says.

At the 1995 conference, participants said workers knew about their exposure risks but lacked access to safety devices, Cohen explains. However, now the problem more often is that when safety devices are available, HCWs don’t want to use them due to the need to change technique or for other reasons.

Cohen says occupational health and infection control managers now understand sharps injury risks and prevention strategies, but two other groups must be targeted in education programs. One is frontline HCWs, and the other is top management.

Good people doing bad things

“One barrier to hospital managers’ awareness is that with the way health care is being centralized, many times top managers not only are far removed from the hospitals they own but they also are far removed from health care,” Cohen states.

“Hospital management is often too far removed from the front line. We have to find the top people and educate them,” he says. “Some people allege they’re bad people doing bad things, but I think they’re probably good people who have no idea they’re doing bad things. They have no idea of the good things they can do instead. It’s our obligation to try to find them and educate them.”

The time has come to stop finger-pointing and blaming, he adds. “Our theme was: ‘I always wondered why somebody doesn’t do something about this; then I realized I am somebody.’ Everybody in health care needs to be aware that they have a role in fixing the problem. We have the ability, in this problem of percutaneous injuries to health care workers and exposures to bloodborne pathogens, to apply solutions with the efficacy of the best strategies we have in public health, so what are we arguing about? Let’s get out there, roll up our sleeves, and do it.” ■



Tips to help employees cope with constant change

Coach ‘walking wounded’ back to productivity

By **Sue Boever**, RN, PhD
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Has your hospital undergone any changes lately? If so, look around. You might find an employee like this:

Once enthusiastic on the job, she now spends her shift going through the motions, emotionally disconnected from patients and co-workers. She seems not so much unwilling to connect as unable to. Changes are met with looks of skepticism or resignation. To her, any news is bad news.

Don’t think employees like this don’t want to care about their jobs; they just can’t. After an unending barrage of mergers, cutbacks, and ever-increasing performance expectations, they’ve lost faith in their institutions. They are depleted, powerless. Like a chronically ill person hit with another virus, they have no reserves left to call on.

Can these employees be saved? Is it possible to help them rediscover their power? It is possible if they can be approached like any other chronically ill person, and given the help they need to understand and take control of their condition.

Here are some specific ways to help:

1. Acknowledge the changes your institution has undergone and candidly ask employees what they want from their jobs. Realize, however, that you may not get much of an initial response. Many of these employees have already unplugged their emotions. Their creativity sapped, they may no longer know what they truly want.

However, they may be able to express anger. They have survived by not thinking about their situations, and now you want them to let down their defenses and be vulnerable. The best thing is to be nonjudgmental.

With gentle prodding, many will remember what they want. Some will long for a return to the days when they had the time and the resources to do their jobs “the right way.” Others want to

know where the organization is headed and what their place and purpose is.

2. Don't be paralyzed by your own limitations. What can you do to improve employee working conditions and morale? Without the attention and support of top administrators, you may feel powerless to effect change.

If this is the case, you can't give a colleague what you don't already have for yourself. But remember, everyone has choices. You may not be able to stop the hospital from merging with another or changing patient protocols, but you can make decisions about the role you want to play in implementing these changes.

Ask yourself the same questions you're asking other employees. What do you want from your job? Do you want to be in control of your response to change, or do you want to be controlled by it? You can turn anger and numbness around — even your own — when you see that you can make a difference by what you do and how you choose to view a situation.

3. Carve out achievable goals. If you had a patient with a stress-related illness, you wouldn't expect an overnight cure. You would examine their sleep habits, their diet, and their lifestyle, and then focus on specific goals — perhaps beginning an exercise program — to improve their condition over time.

Take the same goal-focused approach to helping your employees. For example, say morale is low. You can't give everyone the 20% raise and four-week vacation they might like. However, working together, you can take steps to improve the way they look at and feel about their job. What employees really need is a great coach.

4. Become a coach for cultural change. If you've ever played a sport, you know the difference between a so-so coach and a great one. So-so coaches know all the rules and techniques of the game, and think that by teaching them, they'll produce a winning team. In a hospital setting, they're the kind who expect great service from employees even as they hammer on the time constraints and cost restrictions that prevent employees from providing it.

The truly masterful coach doesn't demand anything. The great coach unearths your passions and abilities to do what seems difficult or impossible. The great coach expands your capacity to produce the results you desire.

No matter what your rung is on the corporate ladder, you can become that masterful coach. Invite employees to think outside the box and find their

way around constraints. Get them to work together on solutions, and motivation and morale will improve. Suddenly, they have a purpose, again connected with what's important to them. They have a role in producing the results they desire.

By regaining power in small ways, employees move from the survival mode to one focused on growth, creativity, and red-carpet service.

5. Practice preventive medicine. The healthiest institutions — like the healthiest people — practice preventive medicine. They approach the cultural impacts of a change with the same scrutiny they apply to the legal and financial aspects.

The better an institution can communicate about change and involve employees in the process, the better it can ward off the stress-related problems associated with it. Unfortunately, just as many of us neglect our own health until illness hits, hospitals also often wait until "emergency care" is needed.

Remember this the next time you see one of your "walking wounded" in the hallway or in your occupational health service office. It's human nature for people to resist change if they feel threatened by it, but change does not have to be destructive and traumatizing. In fact, when framed as opportunity, people embrace it.

It's never too late for an organization to improve its "health habits" for dealing with change, and you can play an important part.

(Editor's note: Sue Boever, a former hospital administrator, is a consultant and speaker on how the health care industry can effectively plan, implement, and reinforce change, based on a model she developed to explain the physical, emotional, and physiological effects of change on employees.) ■

Literature Review

Coignard B, Grandbastien B, Berrouane Y, et al. **Handwashing quality: Impact of a special program.** *Infect Control Hosp Epidemiol* 1998; 19:510-513.

Hand washing is considered the most effective way to prevent transmission of nosocomial infections, yet studies show health care workers have low compliance with basic hand washing (BHW). Few studies on handwashing technique are available, so researchers at the University Hospital of Lille (5,700 HCWs) in France implemented an educational campaign on BHW technique to

identify failed steps in the BHW procedure and focus education on them.

The infection control staff and a network of HCWs defined a 13-step protocol for a proper BHW as follows:

1. **Wear short sleeves or roll up long sleeves before washing.**
2. **Keep fingernails cut short.**
3. **Do not wear jewelry or a watch.**
4. **Let water run for a few seconds.**
5. **Wet hands and wrists with water.**
6. **Take one dose of soap.**
7. **Take soap using elbow or forearm.**
8. **Rub hands and wrists.**
9. **Rinse hands and wrists.**
10. **Dry hands with paper towels.**
11. **Dry hands and wrists gently without rubbing.**
12. **Use paper towels to turn off hand faucet.**
13. **Avoid touching wastebasket when discarding towels.**

In addition, 175 collective training sessions were conducted, supplemented by individual technique demonstrations, hospital newsletter articles, and posters.

Researchers conducted a before/after audit. A BHW was considered proper if all steps were performed correctly. Frequency, duration, and appropriateness of BHW were not evaluated. Data were collected anonymously in a two-step random sampling of physicians, registered nurses and midwives, nurses' aides, and housekeeping staff. Each surveyor observed two or three HCWs, following them during routine activities. HCWs did not know which hand washing was evaluated. The analysis was based on 426 observations for the first audit and 392 for the second.

Results showed that steps one and two had a high success proportion, more than 90%. Steps three, four, six, seven, and 11 rarely were performed properly in the first audit. A subsequent training program emphasized those five steps. The success proportion of steps three through 13 increased significantly in the second audit. The five steps on which the program focused had relative increases between 31% and 72% in the success proportion. In the first audit, the success of step one was associated with the success of step five.

The proportion of proper BHW increased from 4.2% in the first audit to 18.6% in the second. In both audits, the proportion of proper BHW did not differ significantly between medical or surgical units, physicians or nonphysicians, daytime or nighttime, and before or after patient care.

However, the proportion of proper BHW was higher among HCWs who held their present position for less than a year. HCWs also tended to perform better BHW if they had been in practice for less than a year.

While the proportion of each step performed properly and the proportion of proper BHW both improved after the intervention, steps poorly performed in the first audit remained quality break-points in the second audit.

Previous studies have shown that physicians comply with hand washing recommendations less than nurses, but this study did not find such a difference. Overall results showed the difficulty of obtaining good BHW quality. The time required to perform hand washing may explain low compliance, and briefer alcoholic hand disinfection has been proposed in another study.

"Results of this study suggest that alternative protocols also should be simpler," researchers conclude. ■

CDC emphasizes need for HCWs to get flu shots

Advice given for increasing compliance

Improving compliance rates with influenza immunizations is an annual struggle for most hospital employee health professionals, but the U.S. Centers for Disease Control and Prevention (CDC) continues to emphasize the importance of vaccinating health care workers, especially those who attend high-risk patients.

The CDC's updated HCW recommendations list influenza as a disease for which immunization is strongly urged. Guidelines call for health care facilities to offer vaccines before influenza season to all workers who have contact with high-risk patients, especially personnel who work in adult and neonatal intensive care units and medical and surgical units.¹ (**See *Hospital Employee Health*, October 1997, pp. 113-115.**)

Despite that advice, an unpublished 1993 agency survey found that only 17% of hospitals contacted were vaccinating 50% or more of the employees they targeted, "which is lousy," says **Raymond A. Strikas**, MD, a medical epidemiologist in the CDC's national immunizations program. "It suggests more needs to be done."

While some experts have proposed improving immunization rates by making vaccination a condition of employment (see *HEH*, October 1996, pp. 112-115), Strikas says he vacillates about imposing requirements. Instead, he suggests several other approaches based on understanding the possible reasons why HCWs avoid flu immunizations. (See how one hospital increased compliance rates in related story, p. 139.)

Education programs that inform employees of the risk to patients (as well as themselves) if they refuse to be vaccinated are an important factor. "If employees get vaccinated, they pose less risk as a group to patients," Strikas points out.

A 1997 study in long-term-care hospitals confirmed that. It showed that when more than 60% of staff were vaccinated, total patient mortality related to influenza was significantly reduced, while high vaccination rates of patients were not associated with significant effects on mortality.²

Nevertheless, "altruism only goes so far," Strikas adds. HCWs sometimes fail to realize that influenza can be a serious disease for themselves, as well, accompanied by several days of fever and a cough that could persist for two or three weeks. Education programs should explain those facts.

In addition, as many as one-third of doctors and nurses worry about adverse events from flu shots, Strikas says. "They don't appreciate that the risk of adverse events, besides a sore arm, is minimal. That concern needs to be assuaged with data as best we can," he points out.

Fear of adverse reactions stems from having heard about or experienced reactions to past vaccines, especially the 1976 "swine flu" vaccine. Today's vaccines are derived from subunits of chemically killed viruses that cannot cause influenza disease. However, many HCWs still cling to their fears, prompting one employee health department to launch an in-house study to determine what reactions are associated with current flu vaccine. Results showed that the occurrence rate of systemic symptoms among vaccinated workers was not greater than the rate among those who were not vaccinated. (See *HEH*, October 1997, pp. 117-119.)

In another study of staff physicians and nurses at a Veterans Affairs medical center, vaccine non-recipients indicated that the main reason they refused to be immunized was concern about side effects. Researchers concluded that strategies to improve immunization rates should address concerns about vaccine safety.³

A CDC study of employees at a chronic care psychiatric facility showed that previous influenza vaccination and knowledge that vaccine does not cause influenza were the factors most predictive of current influenza vaccination.⁴

False convictions regarding vaccine safety also were identified in a study of low compliance rates among staffs of neonatal intensive care units.⁵

Besides directly addressing misconceptions about vaccine safety, Strikas recommends making vaccination convenient for employees by bringing it to their work and meeting sites via a mobile cart.

"Many people don't take the time to go to the employee health office. If staff won't come to the vaccination, bring vaccination to the staff," he suggests.

Employee health practitioners can take the cart to large staff meetings in hospitals and vaccinate attendees as they enter or leave. The mobile cart concept has improved compliance rates by being available both at work sites⁶ and at meetings or conferences.⁷

Another suggestion for increasing compliance, says Strikas, is to "make a competition of it between nursing staff units or departments," with a "modest reward" to the group that has the highest number of employees vaccinated in a given time period.

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COMING IN FUTURE MONTHS

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Boost compliance rates by addressing HCW concerns

Flu vaccination rates rise after surveying workers

Identifying the concerns of employees who did not participate in an influenza immunization program increased vaccination rates by more than 50% at Children's Hospital in New Orleans.¹

Approximately 66% of the institution's 1,100 employees have direct patient contact, yet only 21% of health care workers received vaccine in the 1995-1996 flu vaccine season. That percentage is typical of other hospitals too, says **Rodolfo E. Begue, MD**, director of infectious diseases at Children's.

Each year, educational programs had been provided to increase workers' awareness of the disease and explain the need for vaccination. Reminder letters were mailed to all employees, notices were posted in common areas, and vaccination carts were taken to nursing units and other work locations. Nevertheless, compliance rates remained low. That prompted the infection control department to conduct a survey evaluating HCWs' attitudes and behaviors concerning influenza immunization, with the goal of identifying ways to boost compliance.

Anonymous questionnaires were mailed to a randomly selected sample of personnel, 100 of whom had been vaccinated during the previous season and 100 of whom had not. The survey yielded some surprising results and provided new ways of persuading employees to be vaccinated.

"Going to employees and asking them what they feel is important is a new approach, and once we got that information, we went back with the

next [immunization] campaign and addressed their specific issues," Begue says. "What we as managers believe is important is different from what workers might feel is important."

For example, the researchers found that 78% of workers who had received vaccine did so out of concern for their personal health. Only 18% indicated that concern for hospitalized patients' health was their motivation.

"To them it's important not to miss workdays so they don't have to take vacation time in the winter that they would like to use in the summer," Begue explains. "Some things that managers don't think of are really the key points that can turn things around. It's not that workers don't care about patients' health, but it's not their first priority. Unless you talk in their language, they're not going to get the point the way you want them to. When you start to talk about them

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not having to take any time off due to being sick and not having to lose any money, that makes more sense to them than theoretical issues such as patients' health and infection control."

Researchers also found that the main reason for nonacceptance of vaccine was concern about influenza infection. But the survey also showed that influenza-like symptoms (cough, fever, and myalgias) were reported similarly during the winter for both vaccinated and unvaccinated employees. However, unvaccinated workers missed nearly twice as many days of work.

Begue says vaccinated workers who experience systemic symptoms during the winter either are ill from other viruses that circulate during that time, or they have a much milder form of the flu.

Other top reasons for accepting vaccine, according to the survey, were the convenience of vaccine administration, the no-cost vaccine offered to employees, and the receipt of vaccine in previous years. Other reasons found for nonacceptance of vaccine included not feeling at risk for influenza infection and concern about a severe reaction.

For the following vaccination season, Begue and staff addressed specific HCW concerns as indicated on the survey as well as providing routine information about the vaccine. Vaccination compliance improved for workers both with and without direct patient contact, as well as for medical staff members, with an overall participation rate of 38%.

Pregnant workers are a problematic group, Begue says, because in many cases their obstetricians tell them not to be vaccinated. "I'm afraid some obstetricians don't have the right information. They always tell [pregnant women] not to get the vaccine, but actually they should be getting it. We must talk with our friends in OB/GYN and tell them that pregnant women actually should get vaccinated," he says.

Successful vaccination programs also require administrative leadership, he adds. "You as a physician or as a nurse talking to employees alone is probably not enough. Administrators must be involved and communicate to workers that unless they have a good reason not to get it, they must get this vaccine. They don't have to make it mandatory, but somehow they have to convey the message that this is a good thing for workers to do for themselves and for the institution," he says.

Begue notes that most of the opposition to getting vaccinated at his facility has been from physicians.

"We're supposed to know all this, but our response can be very primitive," he says. "We

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all get like children when confronted with needles, so we need to do a lot of coaching starting from medical school. Education is the answer, but we still have a long way to go."

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CE objectives

After reading this issue of *Hospital Employee Health*, subscribers participating in the continuing education (CE) program should be able to:

- identify the information OSHA seeks to help reduce percutaneous injuries;
- discuss ways of minimizing needlesticks, according to experts at a recent HCW safety conference;
- cite ways of helping employees cope with organizational change;
- explain ideas for increasing compliance with influenza immunization programs.

Note: If you are interested in participating in the CE program, please call customer service at (800) 688-2421. ■