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### HCWs remain top flu vaccine priority despite shortage

In late summer, public health authorities cautioned about a possible shortfall of flu vaccine. Nonetheless, health care workers remain a top vaccination priority and should receive their vaccines as soon as possible, the Centers for Disease Control and Prevention in Atlanta stated. In case of shortages, hospitals should prioritize worker vaccinations based on workers' exposure to immune-compromised patients, the CDC said . . . . . Cover

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#### CA safe needle law still presents challenges

Even as other states begin implementing safe needle laws patterned after a 1998 California law, hospitals are still facing challenges to comply with the regulations. Initially, hospitals faced shortages of products as they sought to switch before the July 1, 1999, deadline. One year later, hospitals are re-evaluating devices and making adjustments based on patterns of use . . . . . 99

### Employee injury log boosts needlestick reporting

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### Sharps carnival offers novel way to introduce devices

Switching to safer sharps devices involves intensive, hands-on, unit-by-unit training. In addition to that traditional method, St. Luke's Hospital in San Francisco found a way to grab attention: a sharps carnival that offered an introduction to six new devices. Health care workers were enticed to attend demonstrations at booths set up by manufacturers' representatives. . . 103

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## CDC says give flu shots to workers ASAP despite vaccine delay, shortage

*Hospitals should plan priority HCW immunizations*

**D**espite a shortage of this year's influenza vaccine, hospitals are being urged to stick as closely as possible to their regular schedules for immunizing health care workers.

In early summer, the Advisory Committee on Immunization Practices sounded the first warning about problems with production of the vaccine. In July, the Centers for Disease Control and Prevention (CDC) in Atlanta announced "a substantial delay in the distribution of influenza vaccine and possibly substantially fewer total doses of vaccine for distribution than last year."<sup>1</sup>

Nonetheless, health care workers are considered a high-priority group for vaccination, along with people at high risk for complications from influenza and their close contacts.

"If there's vaccine available, go ahead and vaccinate health care workers when you normally would," says **Carolyn Buxton Bridges, MD**, a medical epidemiologist in the influenza branch of CDC.

CDC also advises creating a contingency plan in the event of prolonged vaccine shortages. That might include giving priority to health care workers in intensive care, bone marrow transplant, and oncology units, says Bridges.

"In hospital wards, it is difficult to prioritize," she acknowledges. "You have post-surgical patients and any number of patients whose health status puts them in a high-risk category. Those working with the most immune-compromised may be the first people if vaccine is limited."

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**Do you know which employees face reproductive risk?**

Knowing who is at risk is important as you try to manage reproductive health hazards, says Larry Lindesmith, MD, FACOEM, FCCP, medical director of employee health and safety at Gundersen Lutheran Medical Center in La Crosse, WI. That's why Gundersen will use a questionnaire in high-risk areas to focus educational interventions and keep track of pregnancy outcomes. The questions may be sensitive, but employees seem open to discussing these issues. . . . . 104

**Does Aplisol produce false-positive reactions to TSTs?**

Despite a recent study asserting that the two available tuberculin skin test (TST) reagents are equivalent, some employee health and infectious disease professionals are questioning whether the TST Aplisol produces false-positive reactions in low-risk populations. A letter to the *Journal of the American Medical Association* cited a sudden rise in the number of positive TSTs when Grady Health System in Atlanta switched from Tubersol to Aplisol. However, some tuberculosis experts say proper reading can eliminate concerns about false positives. . . . . 105

**Detecting early signs of latex allergy can be tough**

The early signs of latex allergy may resemble a skin irritation from frequent hand washing or a runny nose from a cold. But detecting these subtle symptoms allows employee health professionals to respond more quickly with alternate products, possibly preventing more serious symptoms from developing, employee health experts say. However, a survey of employee health nurses and infection control practitioners at 95 Washington hospitals found that about 25% of respondents did not associate rhinitis, conjunctivitis, or asthma with possible reactions to latex exposure . . . . . 107

**HEH to cover worker safety conference**

Look for special coverage of the 2000 Frontline Healthcare Workers Safety Conference, held in Washington, DC, Aug. 6-8, in next month's issue of *Hospital Employee Health*. The fifth annual conference will focus attention on specific high-priority issues in the prevention of bloodborne disease in health care settings.

**COMING IN FUTURE ISSUES**

- Increase flu immunization with vaccine 'deputies'
- How to overcome barriers to flu immunization
- New on-line sites offer help with OSHA compliance
- Identifying back injury risk focuses ergonomics
- Creating a 'safety climate' improves work practices

The shortage emerged when growing the A(H3N2) vaccine component proved more difficult than expected. Manufacturers also experienced other delays in production.

Influenza experts had hoped to boost the rate of immunization among high-risk groups. This spring, ACIP lowered the recommended age for immunization from 65 to 50 in order to capture more people with high-risk conditions.<sup>2</sup> Only about 40% of people ages 50 to 64 with chronic conditions received the vaccine in 1997.

Among health care workers, the figures are just as bleak. Only 34% of health care workers reported receiving the influenza vaccine in the 1997 National Health Interview Survey.<sup>3</sup> An optimal percentage would be at least 80%, says Bridges.

In an average influenza season, the virus may be linked to 20,000 to 30,000 deaths in the United States alone, with the highest rates among infants, the elderly, and those with high-risk medical conditions. A delay in administering the influenza vaccine wouldn't necessarily impact its effectiveness, says Bridges. The CDC is recommending that influenza immunization continue throughout the 2000-2001 flu season.

"Influenza season in the U.S. generally peaks anywhere from late December to early March," she says. "The majority of flu activity may not happen until the spring. It only takes one to two weeks to give off antibody after having a flu shot."

The bottom line: Give the shots as early as you can, but still administer them if the vaccine arrives later in the fall. If you end up with extra vaccine, find out if it's needed elsewhere in the community, advises Bridges. "What we really don't want to see is wasting of vaccine," she says, noting that "every year, 5% to 10% of the vaccine ends up getting returned to the manufacturers unused."

**References**

1. Centers for Disease Control and Prevention. Notice to readers: Delayed supply of vaccine and adjunct ACIP influenza vaccine recommendations for the 2000-2001 influenza season. *MMWR* 2000; 49:619-622.
2. Prevention and Control of Influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Recommendations and Reports* April 14, 2000; 49(RR03):1-38.
3. Walker FJ, Singleton JA, Lu PJ, Strikas RA. Influenza vaccination of health care workers in the United States, 1989-1997. *Infect Control Hosp Epidemiol* 2000; 21:113. ■

## CA safe needle law sets tone for nation

*Hospitals still struggle to find best sharps devices*

While California hospitals are still adjusting to the rapid switch to safer sharps devices, the state's needlestick prevention law is having broad influence across the country.

One year after the California law became effective, sharps injury prevention has moved to the top of the employee health agenda. Hospitals in

### **Sharps Safety: The California Experience**

13 other states are looking to the California experience to comply with similar laws, while employee health professionals

in other states are reviewing their programs in anticipation of greater federal activity or other state laws.

"State legislators [around the country] could say, 'If they can do it, we can,'" says **Susan Wilburn**, RN, MPH, senior specialist for occupational safety and health at the American Nurses Association in Washington, DC. "I do believe there are components in the California legislation that are a model for everyone, including OSHA [the Occupational Safety and Health Administration]."

California's experience offers lessons on shifting to safer products. Employee health professionals advise: Gain broad input from front-line health care workers, provide extensive training, and take the time to do it right.

Even a year after implementation, hospitals are struggling to find the best safety devices and to convince employees to activate them.

"[Employee health professionals] need to go back and re-educate after they put them in," says **Cynthia Fine**, RN, MSN, CIC, infection control and employee health program consultant at Catholic Healthcare West, a San Francisco-based hospital system. "They have to be real vigilant about that, and monitoring their use. Are the devices being activated? If they're not, you have to find out why. Is it a lousy device that they don't like, or do they not know how to activate it? [Compliance] certainly isn't a simple process of spending the money and buying the more expensive safety device."

The California legislation transformed the way hospitals integrated new devices and investigated needlesticks. In a year and a half, the state collected information on 2,000 needlesticks at 300 facilities, mostly acute care hospitals. A report on these findings was due out in late summer 2000.

Meanwhile, hospitals accustomed to a slow process of integrating safer products were forced to meet a tight time frame. The sharps injury prevention law was passed in 1998; Cal-OSHA issued an emergency standard in December, with final rules in January. The law became fully effective on July 1, 1999.

Some hospitals faced the frustration of carefully selecting a device and then discovering it wasn't available. "In one of my facilities, the infection control practitioner pulled the old devices out and put the safety ones in, and a month later there were shortages," says Fine. "They couldn't get the safety devices, and they had to put the old ones back in. It confused the staff."

### **Force of law provides employee health boost**

Other states, learning from the California experience, are providing longer implementation times in their sharps safety legislation. Manufacturers also are more prepared now for the demand for safety devices.

Despite the pressure imposed by needlestick safety laws, some employee health professionals welcomed the high profile given to the issue. "When you have the force of law, you also have some advantages in saying, 'This is what we need to do,'" explains **Charlene M. Gliniecki**, RN, MS, COHN-S, vice president of human resources at El Camino Hospital in Mountainview, CA.

With an updated bloodborne pathogen directive from the OSHA, hospitals elsewhere are facing similar questions about safer products and injury reports. OSHA inspectors, who usually come in response to a complaint, are asking to see documentation of the evaluation of safety devices and monitoring of needlesticks, as are surveyors from the Oakbrook Terrace, IL-based Joint Commission on Accreditation of Healthcare Organizations. The Health Care Worker Needlestick Prevention Act (HR 1899) is under consideration in Congress, with more than 185 co-sponsors.

"We are very attentive to each exposure, how it happened, what could be done to prevent it, and

whether a safe device would have prevented it,” says Gliniecki, who is also assistant clinical professor at the University of California in San Francisco. “We didn’t need a law to do this. But it moved it up on the priority list.”

### **Efforts prioritized by risk level**

Although the California law requires the widespread adoption of safety devices, Gliniecki focused her efforts to gain the greatest benefit. Her first priority was venous access to start IV lines, which carries a high risk of blood exposure.

Initial data indicate that with new safety devices, El Camino Hospital reduced its IV catheter vascular access exposures by 40%. “In a time of scarce resources, you really have to pick your battles,” Gliniecki says. “We picked the IV access battle first. We wanted to make that a success as a way of supporting [other changes].”

At the same time, many facilities saw a rise in needlesticks after introducing safer devices. Some of the increase could be due to increased reporting. But employee health professionals often cited the learning curve as staff struggled to become comfortable with the products.

“As a whole, [needlesticks] have gone down, but during the time when people are using new devices they’re not familiar with, I’ve had people call me and say we’ve had more needlesticks this quarter,” says Fine. “[Health care workers] may have had inservice training and then not been able to get adequate supplies, so there’s been a lag time between the inservice and actual use of the device.”

The data collection sometimes points out less obvious reasons for a sudden jump in needlesticks. “There are all sorts of factors that contribute to needlestick injuries,” says Wilburn. “Without the data, you can’t evaluate your situation.”

At a needlestick safety workshop sponsored by the ANA, one nurse told Wilburn that the needlestick log showed an increase in three departments related to obstetrics.

“They had an architectural redesign of their postpartum care delivery to make it more hotel-like,” says Wilburn. That included a recessed space in the wall for the sharps container to make it less noticeable. “One of the things they didn’t pay any attention to was how much clearance

you need to give around that particular sharps container to safely put a sharp in it.

“The nurses were getting stuck because it was almost a blind alley,” she says. “You couldn’t put your hand directly above it to drop it in.”

The hospital is now adjusting that space, she says.

As a result of the law, California health care workers have a heightened awareness about the seriousness of needlestick injuries. In fact, hospitals have faced a rash of complaints that prompted inspections to ensure compliance with the mandates.

Even so, one of the greatest obstacles to the implementation of safety devices has been resistance to change among employees and physicians.

Fine received 700 responses to a questionnaire distributed at 47 hospitals in the Catholic Healthcare West system. Although she had hoped for an even greater response, Fine says, “I think I got a good feel for how the employees are experiencing this change.”

The survey listed the devices and asked staff to circle their response: “I feel safer/I don’t feel safer” and “Effective for patient care/Interferes with patient care.”

Employees also had space to write comments or to suggest a different safety device. The same device often drew strongly different opinions, with some employees saying they hated it and others lauding it.

### **30% of employees prefer old devices**

In some cases, 70% of employees said they feel safer with the new device. But Fine is concerned about the other 30%. “They’re saying they want the old ones back, they felt safer,” she says. “They’re real resistant to the change. Where do you set the level in terms of what’s adequate for employees’ [acceptance] using the devices?”

Fine is now in the process of conducting pilot studies of new devices that could be substituted for some adopted in the past year. Despite problems with implementation, Fine says the process has been positive overall.

“There were some devices people were using that they were very favorable about,” she says. “I think for the most part — though people were frustrated [with the change] — they appreciated the effort we were making.”

Convincing physicians to use the new devices presents a different type of challenge.

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"They're not employees," notes Gliniecki. "Even though we're responsible for their work that may impact the health and safety of our staff, we're not always able to get their buy-in."

For example, anesthesiologists and interventional radiologists were given the safer devices to start IVs. But in some cases, they argued, the new devices weren't as safe for patients.

The law allows exceptions if the safety device would impact patient care, and the hospital is trying to be flexible. But Gliniecki is slowly working on adapting the physicians to the new technology.

"We pick the middle ground we can accept and work with them," she says. "We say we're going to re-evaluate [products] in six months. I think as they have experience with this, they'll be fine." ■

## CA hospital sees 100% rise in reporting with new log

*Needlestick info helps focus prevention efforts*

Armed with a mandate to collect detailed information on each needlestick, California hospitals are gathering unprecedented information on these injuries. For Santa Clara Valley Medical Center in San Jose, CA, that has meant an increase of more than 100% in reported sharps injuries — and a new way to evaluate injury prevention.

"If you have a device that's supposed to be a safety device and you see an increase in injuries among workers using it, it may be that the device is not as good as it was intended to be," says **Donna Haiduven**, RN, PhD, CIC, infection control supervisor at the medical center. "It's a two-way monitor, both for your [work] practice and for the new devices you bring in."

Haiduven and her colleagues revised the employee injury log three times to make sure it complied with state law. (See **sample log on p. 102.**) It is used in conjunction with the Supervisor's Report of Injury, enabling information to be collected from both employees and supervisors.

In addition to obtaining basic facts such as when and where the injury occurred, California hospitals are required to note the brand name of the device. They also record whether the device

had engineered sharps injury protection and whether the safety mechanism was activated or was in the process of activation.

Yet capturing that information isn't always a simple process. A review of employee injury

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logs at Santa Clara Valley Medical Center showed that 93% lacked the brand identification.

"Many times, the employee doesn't know the brand name of the device they used," explains **Kathleen Scott**, NP, MS, COHN, employee health nurse practitioner. "To help the employee, we have a board that has the different devices so the employee can point to the device they were using."

Santa Clara Valley is also trying to standardize devices as much as possible, so the brand identification will be clear just from the type of the device used, says **Sue Chen**, RN, MPH, CIC, infection control nurse.

### ***Make reporting as easy as possible***

Failure to report needlesticks is a problem nationwide. According to some estimates, only about half of all needlesticks are reported.

"It's important to make reporting as simple and accessible as possible," says Scott. "We attempt to do this by having 'blood exposure packets' of the standardized forms and protocols available on all the hospital units."

For example, the hospital previously captured needlesticks on the supervisor's Report of Injury form, which is completed by a supervisor. Because physicians aren't employees, they often didn't fill out those forms. With the standard employee injury log, physician reporting increased by more than 400%. The supervisor's Report of Injury form is included in the packet that health care workers receive either in the employee health department or the emergency department when a needlestick occurs. Employee health personnel follow up with the injured worker, interviewing him or her and filling out the employee injury log.

Because of the new law, employee health professionals now ask employees how they think the needlestick could have been prevented and why they think the injury occurred. Although 91% of employee injury log forms lacked employee opinions about prevention, the questions provide a

*(Continued on page 103)*

*Source:* Santa Clara Valley Medical Center, San Jose, CA.

valuable opportunity for opening discussion about needlesticks, says Chen.

“One of the things the law does mandate is [that] we ask the employee their opinion,” says Chen. “That’s empowering to the employee. Most of them want to be listened to.”

### ***Look beyond data for cause of injury***

So far, the employee injury log has highlighted some areas of possible concern. For example, one device was implicated in 13 needlesticks, and one particular type of syringe was identified six times.

However, the numbers alone are not enough to tell whether the device needs to be replaced. Haiduven and her colleagues are examining other issues, such as education and training. They also consider whether the safety mechanism was activated or if the needlestick occurred while it was being activated.

“[The number of needlesticks] could be a red flag, but at this point we still need more information,” says Chen.

While gathering complete information is always a challenge, employees increasingly understand the importance of reporting, says Scott.

“The process has been very positive,” Chen says. “It gives us data that we haven’t had before, so we can be more effective with our interventions.” ■

## **Come one, come all to learn about safer sharps**

### ***Hospital creates carnival to attract attention***

**W**ith a clown, a juggler, and sharps safety booths, St. Luke’s Hospital in San Francisco may have found the most novel way to introduce new devices to health care workers: a sharps safety carnival.

After months of evaluating and selecting new devices through teams, St. Luke’s faced the daunting task of teaching staff how to use the devices.

The carnival was designed as an introduction to six new devices and a way to entice health care workers to attend demonstrations. Representatives from manufacturers set up booths for each

new device, and one booth focused on safe sharps practices. (Reps also had been working with staff on each unit in more traditional training.)

The event, held in the hospital’s cafeteria, boasted a carnival atmosphere, with popcorn, pretzels, ice cream, balloons, and other carnival treats. “We had a professional clown, a magician, a juggler, and a mime, who circulated

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through the place,” recalls **Roz Potter**, RN, CIC, infection control coordinator at St. Luke’s, who organized the carnival.

She now holds that post at Veterans Administration Hospital-San Francisco.

“Each person got a card when they came in,” she says. “They had to get the card stamped by at least two booths to show they had the devices demonstrated before they got food. That’s how we made sure people were trained on the devices and not just running in, getting food, and running out.”

### ***Paychecks distributed at carnival***

The carnival was scheduled on payday, and the paychecks were distributed at the rear of the room. That encouraged many health care workers who weren’t on duty during the two and a half hours to participate.

The carnival was just a part of the hospital’s overall plan to transition to safer sharps devices.

“We introduced one new device at a time,” says Potter. “We did the education for it. Then we wiped all the old stock out over a weekend, put the new stock in, and had resource people available to teach those who didn’t get in on any of the training.”

Potter, who has a background in advertising and special events coordination, also tried to capture the attention of staff with bright posters. One read: “What’s the larger crime? Not providing sharps with safety devices, or not using the safety device provided? Assembly Bill 1208 . . . It’s the law!”

Another poster used red ink in a syringe to mark the level of blood and body fluid exposures for that quarter. One noted, “three out of seven sharps injuries occurred because the original user did not dispose of the sharp immediately. Don’t become a statistic. Dispose of sharps immediately after use.”

Yet despite the attention-getting efforts, St.

Luke's had a problem encountered by other hospitals that implemented safer devices in the wake of the California sharps injury prevention law. In the months after new devices came into use, needlestick injuries actually rose. Staff who monitored sharps containers observed that the devices often weren't activated.

**Maryann Cutone**, RN-C, MEd, director of education at St. Luke's, says the hospital has since conducted an extensive, unit-by-unit training program. While the carnival demonstrations provided an introduction to the devices, that format isn't effective as a stand-alone educational strategy, she says.

Potter notes that many of the new devices are awkward to use. The problem was compounded because many new devices were introduced into the market quickly to meet the July 1 deadline of the law.

States that provide a longer phase-in period for implementation of new devices may see better results, she says. "It is an absolutely enormous undertaking," Potter states. ■

## Assessing risks can target reproductive hazards

### *Employee questionnaire asks sensitive questions*

**M**onitoring the hospital environment for reproductive hazards such as radiation and waste anesthetic gases may not be enough to ensure employee safety. By categorizing employees by risk level, employee health professionals can target educational interventions and conduct medical surveillance, says **Larry Lindesmith**, MD, FACOEM, FCCP, medical director of employee health and safety at Gundersen Lutheran Medical Center in La Crosse, WI.

Lindesmith, who is drafting guidelines for the medical center occupational health section of the American College of Occupational and Environmental Medicine in Arlington Heights, IL, has developed a risk assessment model and medical monitoring questionnaire to help manage reproductive hazards.

Employees at high risk will be offered special educational programs and reminders that they can use extra protective equipment or request a

temporary reassignment. Medical monitoring will enable Gundersen Lutheran, a community teaching hospital, to track any trends in miscarriages or birth defects.

"In looking at [our policies], we were aware that there is no good guidance as to what should constitute even an assessment for reproductive health hazards," says Lindesmith. "While there are various texts and guidelines, there is nothing that has helped direct an individual health care worker or institution, other than to say they should check into their reproductive health and try to protect them. We're trying to make things a little more specific and provide some more specific guidance."

### ***Risk identification provides framework***

Identifying employees at greatest risk helps clarify the hazards and gives employee health professionals a framework for responding, says Lindesmith, who is revising the reproductive health hazard reduction policy at Gundersen Lutheran with colleagues Johanna Hargreaves-Kwong, RN, MSN, and Mary V. Lowell, RN, MSN, COHN-S.

Employees who have undergone a vasectomy or tubal ligation have no reproductive risk, regardless of exposure. Employees who are pregnant, trying to become pregnant, or who do not always use birth control are at high risk. Those who use birth control consistently are at low risk. The risk is also associated with the possibility of exposure to the hazards.

"You can start at the top category and work down as you have time and capabilities," he says. "The high-risk groups are the ones definitely exposed to known evidentiary agents that are known to cause reproductive problems and who are pregnant or attempting to get pregnant."

To assess risk, Lindesmith will ask employees in high-risk areas to fill out a reproductive health questionnaire. If employees move in or out of a high-risk job or if their reproductive health status changes, Lindesmith has asked them to notify the employee health department.

What safeguards should you provide for high-risk employees? Ultimately, it is up to individual employees to decide how they will respond to reproductive risks.

Lindesmith notes that the U.S. Supreme Court has ruled that workers can't be required to change job duties because they are pregnant or trying to become pregnant. They simply must be

informed of hazards and given options. Instead, Lindesmith focuses on hazard elimination and reduction, safe work practices, monitoring exposure levels, medical surveillance, and employee education. For example, Lindesmith makes sure periodic monitoring occurs to detect waste anesthetic gas wherever an anesthesia machine is in use. Daily checks of the scavengers are conducted to prevent gas from escaping into the work environment.

Knowing who is at high risk — such as employees who are pregnant or trying to become pregnant — helps Lindesmith develop focused educational sessions. For example, a group class on protecting against radiation hazards might offer a question-and-answer period for employees and emphasize taking extra precautions.

“We may counsel someone in the radiation area to be sure they’re watching out for stray radiation from the floor from below,” he says. “You have to be sure they’re wearing the longer protective lead aprons.”

Lindesmith documents badging efforts and results, training and education sessions and materials, the use of surveillance and follow-up of any identified concerns, and the offering of personal protective equipment and of engineering and administrative control efforts.

### ***Hospital to track miscarriages***

As delicate as it is to ask people about whether they are trying to conceive and whether they regularly use birth control, the most unique aspect of Lindesmith’s reproductive health plan may be the medical monitoring. He wants to know whether hazards may create an increased likelihood of poor reproductive outcomes.

While any individual miscarriage or birth defect could be tied to factors completely unrelated to work environment, Lindesmith will be looking for any trends or significant variation from expected rates.

Lindesmith acknowledges that such surveillance is rare, outside of research institutions. “In the literature, I haven’t found much in the way of good data that measures outcomes showing that the safety measures we’re using around the country actually work,” he says. “This is designed to try to allow some data collection in regular patient care institutions as opposed to research institutions.”

On an annual basis, perhaps at the same time as tuberculosis testing, employees in high-risk

areas will respond to questionnaires, providing information on any miscarriages or birth defects. Information will be collected from men about their wives or partners, as well as from women. Over time, Lindesmith hopes to compare such data to national norms.

“This is not going to give us day-to-day information, but it will allow us to monitor what’s happening at our institution on a long-term basis,” he says.

Lindesmith doesn’t yet know whether employees will agree to complete the questionnaires, which are voluntary and confidential. He notes that employees in high-risk areas such as the post-anesthesia recovery unit are aware of the hazards and open about the issues involved. The questionnaires will be kept separate from regular medical records.

“Our feeling is that most [employees] will not feel threatened by this,” he says.

*[Editor’s note: Information for employees about reproductive health hazards is available from the National Institute of Occupational Safety and Health in these publications: “The Effects of Workplace Hazards on Female Reproductive Health” (DHHS/NIOSH Pub. No. 99-104) and “The Effects of Workplace Hazards on Male Reproductive Health” (DHHS/NIOSH Pub. No. 96-132). Telephone: (800) 35-NIOSH. On-line: [www.cdc.gov/niosh/99-104pd.html](http://www.cdc.gov/niosh/99-104pd.html) and [www.cdc.gov/niosh/malrepro.html](http://www.cdc.gov/niosh/malrepro.html).] ■*

## **False-positive TB tests: Is the reagent at fault?**

*Improper reading of skin tests also a problem*

**F**alse-positive reactions to a tuberculosis skin testing reagent are causing a stir among employee health departments.

In one month after switching from Aplisol (Parkdale Pharmaceuticals, Rochester, MN) to Tubersol (Pasteur Merieux Connaught USA, Swiftwater, PA), 11 health care workers at the Grady Health System in Atlanta had a new tuberculin skin test (TST) conversion. Chest radiographs showed no evidence of tuberculosis, and retesting with the Tubersol purified protein derivative (PPD) came out negative.<sup>1</sup>

Employee health and infection control professionals concluded that the false positives were the result of the switch.

In a letter to the *Journal of the American Medical Association*, Henry Blumberg, MD, an infectious disease specialist at Grady and the Emory University School of Medicine, and colleagues disputed a recent published study concluding that Aplisol and Tubersol are equivalent.<sup>2</sup>

“Our experience demonstrates the need for a better and more reliable test for detection of tuberculosis infection and suggests that when a TST is used among a low-risk population . . . the majority of positive results actually may be false-positives,” the letter stated.

### ***Study called them ‘equivalent’***

Questions about false positives with Aplisol have lingered for years. Employee health professionals have reported itching and redness associated with the reagent. But does Aplisol produce an induration that is significantly larger than what Tubersol would produce in the same person?

According to a comparative study conducted by Margaret Villarino, MD, MPH, at the Centers for Disease Control and Prevention, and colleagues at CDC and state health departments, there were no significant differences between the reaction sizes of the two reagents when used in low-risk populations.<sup>3</sup>

Some tuberculosis experts assert that “false positives” actually stem from improper reading of the skin test reactions, and not from a problem with the reagent.

In one study, pediatricians, pediatric academicians, and nurses were asked to read the Mantoux tuberculin reaction of a known tuberculin converter. Only 7% read it correctly.<sup>3</sup>

“People don’t know how to read them very well at all,” says **Lee B. Reichman**, MD, MPH, executive director of the National Tuberculosis Center at the University of Medicine and Dentistry of New Jersey in Newark. “It’s very disappointing. If people are properly and appropriately trained and experienced, then you get better readings.”

The National Tuberculosis center provides training to hospitals and health departments across the country.

**Edward Nardell**, MD, tuberculosis control officer at the Massachusetts Department of Public Health and associate professor of medicine at

Harvard Medical School in Boston, agrees that the skill level of people reading the skin tests may have made a difference in the Villarino study. But he notes that employee health departments must conduct the tests in a time-pressured, real-world environment — not in a controlled study.

“I think you can train a research nurse or physician to tell the difference between a soft induration you get with Aplisol and the harder induration you get with Tubersol, and to ignore the erythema [redness]. You seem to get a lot more [redness] with Aplisol,” says Nardell, who also practices at Cambridge Hospital.

“I personally have seen an intern who was told by employee health that she had a positive PPD, having previously tested negative,” he says.

“I looked at it and it was pretty impressive, with a lot of redness and some soft induration. I had her retested with Tubersol and there was no reaction at all. I think the majority of occupational health nurses and physicians would call that positive, Nardell adds.

### ***Massachusetts switches back to Tubersol***

The Massachusetts Department of Health, which provides tuberculin statewide, is switching back to Tubersol, despite the increased cost of that reagent. That change includes the employee health department at Cambridge Hospital.

“We’re in a low-prevalence situation in most of the country for tuberculosis,” says Nardell. “The last thing in the world you want is an overly sensitive test.”

Reichman suggests that employee health departments using Aplisol focus on proper reading of skin tests. “They should chose an antigen — don’t change the antigen — and make sure it’s read properly,” he says. “You can’t compare people unless the antigen stays the same.”

### ***References***

1. Blumberg HM, White N, Parrott P, et al. False-positive tuberculin skin test results among health care workers. *Research letters. JAMA* 2000; 283:279.

2. Villarnio ME, Burman W, Wang YC, et al. Comparable specificity of two commercial tuberculin reagents in persons at low risk for tuberculous infection. *JAMA* 1999; 281:169-171.

3. Kendig EL Jr., Kirkpatrick BV, Carter WH, et al. Underreading of the tuberculin skin test reaction. *Chest* 1998; 113:1,175-1,177. ■

# Early signs of latex allergy often are easy to miss

*Skin irritation often precedes other symptoms*

**I**tchy bumps on the hands, a constant runny nose, tightness in the chest. These early signs of latex allergy may often be missed by employee health professionals, according to a survey of hospitals in the state of Washington.

While early signs of latex allergy can be subtle, their detection is a critical part of a latex management program, employee health experts say.

"If we can identify individuals who have the signs early, we can hopefully develop interventions for those individuals or have them get out of the exposure scenarios," says **Martin A. Cohen**, ScD, CIH, industrial hygiene research manager of the Safety and Health Assessment and Research for Prevention (SHARP) program at the Washington State Department of Labor and Industries in Olympia.

In a survey of employee health nurses and infection control practitioners at 95 Washington hospitals, about 25% of respondents did not associate rhinitis (runny nose), conjunctivitis (red eyes), or asthma with possible reactions to latex exposure.<sup>1</sup>

"They were reasonably well-educated, but the more subtle issues weren't as well understood," says Cohen.

## *Excessive hand washing can spark reactions*

In fact, cases of itchy, red, and scaly hands are often due to excessive hand washing, and Type IV allergic contact dermatitis is likely triggered by a reaction to chemicals used in glove processing.<sup>2</sup>

"When an employee health nurse is looking at these people [with dermatologic symptoms], they need to follow a protocol to determine if they have a latex problem," says **Deborah R. Roy**, MPH, RN, COHN-S, CET, CSP, president of SafeTech Consultants in South Portland, ME. "The vast majority of dermatitis problems are not latex allergy. They're just irritant situations. You've got to weed out which is which." (See **Latex Allergy Protocol for Occupational Health Nurses, inserted in this issue.**)

Early detection of latex allergy actually should begin before an employee exhibits any symptoms at all, advises Roy. A simple questionnaire can

determine if employees are at high risk for latex allergy.

Risk factors for latex allergy include: multiple surgeries before age 18, frequent bladder catheterization, multiple allergies, asthma or frequent urticaria (hives) or rhinitis, and certain food allergies (including avocado, banana, kiwi, chestnut, and tomato).

"If they are at high risk based on the questionnaire and they're in a job, as in the OR, where they've got daily long-term contact with gloves, they may need to switch to another [non-latex] product," says Roy. "The proactive approach eliminates a lot of problems."

In the most severe cases, Type I latex allergies can trigger anaphylaxis. But Roy notes, "most people are going to have dermatologic symptoms as the early symptoms."

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### Editorial Questions

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The redness may look similar to irritant dermatitis, which is not caused by allergy. But the allergic reaction involves vesical formation, says Roy. "It's more than a rash," she says. "It's raised areas that are broken."

To identify these cases, Roy recommends a protocol that includes frequent re-checking to determine whether symptoms are resolving.

An employee with glove-related symptoms and risk factors for latex allergy should immediately switch to non-latex gloves, advises Roy. Employees without risk factors should use low-protein, powder-free gloves. The corn starch powder can be a nutrient source for bacteria-macerated hands, she says.

Those employees should use nonpetroleum hand cream five to 10 times a day and should consider using cloth glove liners to absorb moisture, Roy says. If employees comply with these recommendations and symptoms still don't resolve within nine days, they should switch to nonlatex gloves, says Roy.

Ultimately, unresolved cases of skin irritation should be referred to an allergist, she says.

### **Hospitals responding to latex risk**

Meanwhile, hospitals are increasingly taking measures to reduce latex exposure among all patient care employees, Cohen says. When he conducted the survey about latex programs in 1996, most hospitals responded to latex allergy by changing glove type just for affected employees.

But in an update of that survey, which is not yet complete, Cohen says he is finding much more activity and awareness surrounding latex allergy. That includes hospitals that switch to low-protein, powder-free gloves, nonlatex exam gloves, or nonlatex gloves hospitalwide.

"Preventing exposure is the first line of defense," says Cohen. "Regardless of whether people have allergies in the hospitals, they should probably try to reduce exposures so new cases aren't developed."

### **References**

1. Cohen MA, Kaufman JD. Latex sensitivity in Washington state acute care hospitals: A needs assessment and survey of awareness of the issues. *J Am Assoc Occup Health Nurs* 2000; 48:297-304.
2. Roy DR. Latex glove allergy — dilemma for health care workers, an overview. *J Am Assoc Occup Health Nurs* 2000; 48:267-277. ■

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**A**fter 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 those issues affect health care workers, hospitals, or the health care industry in general;
- cite practical solutions to problems associated with the issue, based on overall expert guidelines from the Centers for Disease Control and Prevention, the National Institute for Occupational Safety and Health, the U.S. Occupational Safety and Health Administration, or other authorities, or based on independent recommendations from clinicians at individual institutions. ■