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IN THIS ISSUE

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Flu syringe debacle underscores that sharps safety may be slipping as priority

Novartis syringes had no safety feature

When a local public health department in California opened packages of FluVirin pre-filled syringes to start the flu immunization campaign, the vaccine administrators were stunned. Contrary to federal law and regulation, the syringes had a fixed needle with no safety device.

The California Department of Health had received 50,000 of those syringes through the Centers for Disease Control and Prevention, but the packaging did not indicate that they had a fixed, conventional needle. California immediately contacted Novartis, the manufacturer, and the CDC to substitute the syringes for a safe version.

Nationwide, CDC contracted for 200,000 of the FluVirin syringes that were delivered to 17 states with fixed, conventional needles. It was up to the consumers — the health departments or private customers — to swap them for other syringes or multidose vials.

To sharps safety experts, the incident highlights the need for greater

Will Obama administration embolden OSHA?

New administration may be favorable to worker rights

Will the Obama presidency bring mandates for safe patient handling? More citations from the U.S. Occupational Safety and Health Administration? Recognition of new hazards?

With the economy and the war in Iraq at the top of the policy agenda, President-elect Barack Obama hasn't gone on record about worker safety and health. But the power change from Republican to Democratic administrations indicates a probable swing toward greater regulatory enforcement and an increased emphasis on the worker perspective.

*(See **Obama/OSHA,** continued on page 5)*

vigilance and a renewed focus on sharps safety. In fact, after an initial significant drop in needlesticks after the Needlestick Safety and Prevention Act of 2000, sharps injuries have reached a plateau, according to available tracking data. **(For more information on recent trends in sharps injuries, see related article on p. 10.)**

"The idea of needle safety hasn't penetrated through the whole medical culture," says **June M. Fisher**, MD, director of the TDICT (Training for Development of Innovative Control Technologies) Project in San Francisco. "I think this is the most egregious example of that. How else could you explain it?"

In fact, a spokeswoman for Novartis Vaccines in Cambridge, MA, seemed unaware of the federal law and U.S. Occupational Safety and Health Administration regulation. "The fixed 5/8-[inch] needle has been FDA-approved and CDC-supported, and it's been available in the United States since 1993," says **Beth Birke**, director of global vaccines communication.

However, Birke said Novartis notified all customers — both public health departments and private customers — that they could exchange the syringes for "alternate presentations." Novartis will not sell the fixed needle syringes in subsequent flu seasons, she says.

In its Vaccines for Children program, the CDC contracts with four manufacturers for flu vaccine. Traditionally, the pre-filled syringes have a Luer-Lock, which enables the user to insert their preferred safety-engineered needle. The contract didn't specify that the syringes needed to have either a safety device or a Luer-Lock because this had never been an issue before, says **Jeanne M. Santoli**, MD, MPH, deputy director of the Immunization Services Division in the CDC's National Center for Immunization and Respiratory Diseases.

"We knew we were getting pre-filled syringes. We did not realize they had staked needles attached," she says. "We weren't intending to contract for needles with syringes.

"We purchased 12 to 13 million doses to be available to state programs [of which about 200,000 were the fixed needle syringes]. This is a relatively small part of our total purchase, but it's an important issue," she says. "Our contracts in the future will address the fact that staked needles are not something we want to enable state programs to purchase."

The CDC states that one of its seven "health care challenges," or goals, is to "eliminate occupational needlestick injuries among health care personnel." However, that goal was set by CDC's Division of Healthcare Quality Improvement, while the vaccine was ordered by the Immunization Services Division.

Employers carry burden of compliance

Under the needle safety law and bloodborne pathogen standard of the U.S. Occupational Safety and Health Administration, employers — not

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manufacturers — carry the responsibility for providing safe sharps. Hospitals and other device purchasers must influence the market by demanding safer products, sharps safety experts say. **(See related article on p. 6.)**

FDA weighs pt safety only

The Food and Drug Administration approves medical devices but considers only patient-related issues and not worker safety. Purchasers can feel confounded when they receive pre-filled, nonsafety syringes or open kits that contain conventional devices.

Gina Pugliese, RN, MS, vice president of the Premier Safety Institute, part of the Charlotte, NC-based Premier health care alliance, worked for years to convince manufacturers not to sell pre-filled syringes with fixed, conventional needles or kits with nonsafety syringes.

"I'm surprised that in 2008, that there would be a pre-filled vaccine made without a safety needle considering OSHA has specifically mandated safety devices since 2001," she says. "We're not talking about a syringe that could be used for research. The implication is that it would be injected into a patient and therefore put the [vaccine administrator] at risk."

In fact, it was a shock for health care purchasers, as well. **MaryAnn Gruden**, MSN, CRNP, NP-C, COHN-S/CM, employee health coordinator at Western Pennsylvania Hospital in Pittsburgh, opened up packages two days before her flu vaccine campaign, prepared to place safety needles on syringes with Luer-Locks. She was taken aback by the fixed needle — but needed to move forward with her vaccination campaign.

"It's really unnerving to me to have a needle without a safety feature on it," says Gruden. "How can they put this out without any safety [feature]?"

That is a question many have asked — and that may be a powerful impetus for change, says Pugliese. "When something like this happens, it really provides an opportunity to take a closer look at an issue," she says.

Need for clear message

The International Health care Worker Safety Center at the University of Virginia in Charlottesville contacted the CDC five years ago to ask whether safety-engineered needle protection was required for pre-filled vaccine syringes, as with other sharp devices. "We didn't get a clear answer at that time, and it continues to be a controversial issue. I think there is a need for a consistent national policy, however," says associate director **Jane Perry**.

Flu vaccine isn't the only area of concern. Medications such as insulin sometimes come in pre-filled syringes to make dosing easier. And while insulin may be self-injected by patients, the same syringes may be used in long-term care or other settings, notes **Dionne Williams**, MPH, senior industrial hygienist with OSHA.

Don't use nonsafety syringes

While the role of manufacturers in sharps safety may be debated, there's no question about an employer's responsibility. "It's not permitted to use a conventional needle where there are acceptable alternatives and there certainly are acceptable alternatives [to conventional pre-filled vaccine syringes], some of them manufacturer by the same manufacturer [who produced the nonsafety devices]," says **Deborah Gold**, MPH, CIH, senior safety engineer in the research and standards health unit at Cal-OSHA in Oakland.

When Cal-OSHA learned of the syringe problem, it immediately began working with Novartis and CDC to arrange for a substitution of safe devices. Due to supply limitations, Novartis swapped one-quarter of the syringes with pre-filled syringes with a Luer-Lock and three-fourths of the supply with multidose vials, Santoli says.

Still, Cal-OSHA worried that some flu clinics would proceed and vaccine administrators wouldn't be aware of the device problem until they opened the packages. Cal-OSHA placed an alert on its web site in late October. "The problem is getting the word out to people before they start to use them," says Gold.

Federal OSHA placed a link on its web site to a Letter of Interpretation related to pre-filled vaccine syringes that might be used during a pandemic. **(See article on p. 4.)** "Any kind of injection or vaccination is going to raise the same issues if you're using an unprotected needle," says Williams.

Meanwhile, health care providers need to make their preferences known to manufacturers, she says. "I know that manufacturers are interested in being a part of the process. They're in business to sell devices," she says. "If they make a device and it's not selling, it's not going to be beneficial to them." ■

OSHA: Plan for safety syringes in flu pandemic

In response to questions about safety-engineered syringes for use during a pandemic, the U.S. Occupational Safety and Health Administration issued the following interpretation of the bloodborne pathogen standard:

Question 1: Many state and local public health officials, as well as hospital administrators and purchasers, are beginning to mobilize to procure supplies and relevant resources, such as medical devices, that will be needed to immunize the public in the event of an influenza pandemic. When stockpiling syringes for pandemic influenza vaccination and treatment, are health care facilities and public health practitioners required to procure safety-engineered sharps in adherence with the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030)?

Reply 1: As you may know, state and municipal public health officials do not fall under the jurisdiction of federal OSHA. States and municipal employers in states with OSHA state plans must comply with state bloodborne pathogens standards (generally, the same as the federal standard.) Hospitals and others over whom federal OSHA does maintain regulatory authority must comply with 29 CFR 1910.1030, the federal bloodborne pathogens standard. Also, outside of OSHA state-plan states, state and local public hospitals receiving Medicare payments must comply with the federal bloodborne pathogens standard as a condition of their agreements with Medicare [42 USC §1395 cc(a)(1)(V)]. The standard at 29 CFR 1910.1030 applies whenever there are employees with occupational exposure to blood or other potentially infectious materials (OPIM). Using needles and syringes for vaccination is one way that employees may become exposed to blood, specifically through a needlestick from a used needle.

As you may know, the Department of Health and Human Services (DHHS) has been assigned the responsibility for developing a national stockpile of vaccine for influenza strains with pandemic potential and to expedite the rapid development, licensure, and production of new influenza vaccines. DHHS recommends that each state develop a plan for receiving and managing the storage and distribution of supplies from the Strategic National Stockpile (SNS). Additionally, DHHS recommends that during the pre-pandemic phase, health care facilities work with state and local health departments on plans for distributing pandemic influenza vaccine. It is recommended that health care administrators with the responsibility of preparing for pandemic influenza keep abreast of updates to the recommendations from the DHHS. Health care facilities may need to stockpile a wide range of medical supplies, including syringes, when preparing for possible disruptions in delivery service. It is a requirement of OSHA's bloodborne pathogens standard that employers, who have employees exposed to blood and/or OPIM, evaluate, select, and use engineering controls (e.g., sharps with engineered sharp injury protections, SESIPs) to eliminate or minimize exposure [29 CFR 1910.1030(c)(1)(v) and 1910.1030(d)(2)(i)]. It is advisable for health care facilities to anticipate their needs for specific consumable and durable medical supplies, including safety syringes and to develop a plan for stockpiling.

Question 2: A possibility exists that some portion of the pandemic influenza vaccine will be packaged in pre-filled syringes. Historically, vaccines and other curatives and therapeutics packaged in pre-filled syringes have not been accompanied (or prepackaged) with safety-engineered needles. If pandemic influenza vaccine is packaged in a pre-filled syringe, will those employers administering the vaccine be required to purchase safety needles to attach to those pre-filled syringes per paragraph [1910.130(d)(2)(i)] of the OSHA Bloodborne Pathogen Standard?

Reply 2: As you stated, it has been the practice for a variety of vaccines to be made available in pre-filled syringes, many of which are not equipped with safety devices. 29 CFR 1910.1030(d)(2)(i) requires employers to make available safety devices for use by employees who are exposed to blood or OPIM. It is uncertain exactly how the occurrence of a pandemic influenza situation will impact the health care community and the market availability of safety syringes. However, where safety-engineered equipment, such as add-on safety devices, is commercially available, employers are expected to implement their use to prevent needlestick incidents. Furthermore, we are unaware of any technical reasons that would prevent the use of safety-engineered needles for pre-filled syringes at this time. ■

Obama/OSHA

(Continued from cover)

"We don't have a lot of information about his agenda — if there is any agenda — on worker safety," says **Celeste Monforton**, MPH, DrPH, research instructor at the George Washington University School of Public Health. "We can speculate on what things we hope would be important.

"One of the top things for worker safety advocates would be protection for public employees who aren't currently covered under the [Occupational Safety and Health] Act."

Some 8 million workers not covered

About 8.6 million workers currently aren't covered, including health care workers at public hospitals in states that are under federal OSHA or don't have state laws that cover them.

Efforts were made in the Clinton administration to extend health and safety rules to public workers, but it was attached to other provisions, including tougher OSHA penalties and a requirement for employers to create health and safety committees.

"In '94, the Gingrich Congress took over, and it swung the opposite way with recommendations to gut OSHA," Monforton recalls. "In the two-year window of opportunity to get public sector employees covered, it didn't happen."

Meanwhile, under the Bush administration, OSHA has emphasized compliance assistance to businesses and alliances with professional organizations. An Obama administration might shift toward programs that educate workers and their rights to a safe workplace, she says.

"I'd like to see more focus on building the knowledge base, the skills and the capacity of workers to advocate for themselves for safer workplaces," Monforton says.

That should include a greater emphasis on enforcement, says **Bill Borwegen**, MPH, occupational safety and health director of the Service Employees International Union (SEIU).

"In the last eight years, there's become an incredible imbalance between enforcement and employer assistance," he says. "The bottom line is that the agency that Richard Nixon created was a regulatory agency. Just like we're seeing in the banking and investment industries, less regulation is not necessarily a good thing."

In past transitions to a new administration, there have been dramatic shifts in the focus related to worker health and safety. The Clinton administration issued an ergonomics standard in its waning days, and the rule was then rescinded by Congress shortly after George W. Bush took office.

An emboldened OSHA may initiate a new ergonomics standard — although the Congressional Review Act restricts OSHA from issuing a similar standard without express permission from Congress. Or Congress may turn more serious attention to the Nurse and Patient Safety and Protection Act, which was introduced in the House of Representatives in 2006 but has not been the subject of hearings.

"I'm hopeful that the new administration will make a difference," says **Anne Hudson**, RN, a back-injured nurse from Coos Bay, OR, who founded WING USA (Work Injured Nurses' Group), which advocates for safe patient handling.

"I would like to see a broad-sweeping reform to help all workers. It's so badly needed," she says. But whether a general ergonomics standard moves forward, health care-specific legislation on safe patient handling still is needed, Hudson adds.

With both the economy and health care ranking as top priorities for the new administration, some health care worker safety issues should be a natural fit. Beyond regulation, hospitals need to get the message that safe patient handling is essential to recruiting and retaining nurses amid a growing nursing shortage, says **Nancy Hughes**, MS, RN, director of the Center for Occupational and Environmental Health at the American Nurses Association in Silver Spring, MD.

Tight hospital budgets may imperil some initiatives. "With the [ailing] economy, we have some concerns about how projects will move forward, including safe patient handling programs," says Hughes, noting that hospital construction projects need to incorporate safe patient handling elements, such as tracks for ceiling lifts.

Yet ultimately safe patient handling protects the patient and saves money by reducing injuries, she says.

As *Hospital Employee Health* went to press, worker advocates remained concerned about a Bush administration effort to add new hurdles to OSHA rule making. In July, the U.S. Department of Labor's assistant secretary for policy proposed a "risk assessment" rule that would require OSHA to publish an Advance Notice of Proposed Rulemaking and to seek public input "when developing risk assessments for health standards

regulating occupational exposure to toxic substances and hazardous chemicals."

"It would add an additional step in the rulemaking process," says Monforton, who notes that OSHA rules generally take eight to 10 years to develop and finalize as it is. "It would be additional years of delay in getting a rule out."

If the rule is implemented in the final days of the Bush administration, it's unclear what steps an Obama administration could or would take to change it, she says. ■

Device makers face no requirements for safety

Mandate applies to employers, not manufacturers

Why do manufacturers sell devices that employers can't legally use?

That was a question that arose when Novartis Vaccines shipped pre-filled flu vaccine syringes with a fixed, conventional needle. After all, the syringes have no other use than injection into patients, and there are acceptable alternatives. The U.S. Occupational Safety and Health Administration requires employers to use safety-engineered sharps, as mandated by the Needlestick Safety and Prevention Act of 2000, unless the activity poses no risk of bloodborne pathogen exposure (as in a pharmacy) or there is a medical necessity to use a conventional device. **(See related article on p. 7.)**

"It's the employers' responsibility to make sure these devices are purchased with engineered sharps protection," says **Robert Harrison**, MD, MPH, professor of occupational medicine at the University of California San Francisco. "The only exception is where these engineered sharps devices are not available on the market or cannot be used because of patient safety."

"The OSHA standard put the responsibility on the employer. The employers can only get so far in tackling this issue own their own," says **Angela K. Laramie**, MPH, epidemiologist with the Sharps Injury Surveillance Project in the Massachusetts Department of Public Health in Boston.

Yet employers can't expect any assistance from the Food and Drug Administration. When the FDA approves medical devices for "safety and efficacy," it considers those issues only as they relate to patients, not workers. (A spokesperson for the FDA could not be reached for comment.)

In 2000, the advocacy group Public Citizen and the Service Employees International Union (SEIU) petitioned the FDA to ban certain "unsafe devices," including glass capillary tubes. The FDA, National Institute for Occupational Safety and Health, and U.S. Occupational Safety and Health Administration had issued a joint alert in 1999 cautioning against using the glass capillary tubes because of the risk of breaking.

In 2005, the FDA rejected the petition, noting the lack of data on specific devices that cause needlesticks. "In the absence of such information about specific devices, FDA was unable to conclude that any particular device presented a 'substantial deception or an unreasonable and substantial risk of illness or injury.'" Instead, the FDA focused on the need for education about safety devices.

The Sharps Injury Surveillance Project in the Massachusetts Department of Public Health is collecting information on sharps injuries by brand and type of device, but that information has not yet been analyzed. In the meantime, Harrison and others have called for greater FDA involvement in ensuring the safety of sharps devices for workers.

Other agencies could help guide employers and manufacturers by providing voluntary design standards, Harrison says. "This would be a benchmark that purchasers could use," he says. "The consumer has to have a way to evaluate those devices."

Buyer be wary — and demand safety

Currently, manufacturers have been influenced by customer demand. While some employers seek the cheapest device, the market clearly has created new innovation and a focus on safety. In 2003, BD of Franklin Lakes, NJ, discontinued sales of some conventional devices, citing U.S. progress in converting from conventional to safety products. **(See *Hospital Employee Health*, October 2003, p. 127.)**

The TDICT (Training for Development of Innovative Control Technologies) Project in San Francisco developed user-based criteria checklists for device evaluation and selection, and those device-specific documents became de facto benchmarks that many manufacturers used in designing new products, says director **June M. Fisher**, MD.

Fisher and other sharps safety experts have hesitated calling for manufacturing criteria for devices because they don't want to stifle innovation into new and better designs. However, user-based

criteria should be established to act as broad benchmarks for the industry, she says.

The FDA published criteria in a 1992 that said sharps safety devices should: provide a barrier between the hands and needles after use; allow or require the worker's hands to remain behind the needle at all times; be an integral part of the device, and not an accessory; and be in effect before disassembly, if any, and remain in effect after disposal. The safety alert also said the device should be simple and easy to use and require little training.

The FDA should move beyond just making recommendations, says Fisher. "I would like to see FDA look not only at patient safety, but at worker and community safety," she says. "And that should be in their mission." ■

Needlestick injury rates stuck in limbo

OR, nonsafety devices may be culprit

Hospitals are stuck in a holding pattern in their sharps safety programs. Injury rates dropped dramatically after the implementation of safer sharps in 2001, but many facilities have since reached a plateau.

In about half the cases, the safety mechanisms were not activated, according to sharps injury databases, which indicates that either health care workers haven't been instructed how to use the devices properly or they don't feel comfortable activating them. Conventional devices still are commonplace, as well, the data indicate.

For example, for Massachusetts hospitals, the rate was 19.7 sharps injuries per 100 licensed beds in 2002. It dropped to 18.4 per 100 licensed beds in 2003, but then stayed the same in 2004. Massachusetts is the only state that requires all acute and chronic care hospitals licensed by the Department of Public Health to report their bloodborne pathogen exposures annually.

Among hospitals in the EPINet network of the International Health care Worker Safety Center at the University of Virginia in Charlottesville, needlesticks declined significantly from 1999 to 2001, but then remained stable since then.

While the operating room continues to be a challenge, many of the injuries occur with blood collection devices and syringes for which there are many safety options available. In Texas, which requires public facilities to report their bloodborne pathogen exposures, 47% of sharps injuries in 2006 occurred with devices that lacked safety features. In Massachusetts, more than half of the injuries involve devices without safety features.

"With hypodermic needles and syringes, in 2005 while we saw half of the injuries occurring with devices with safety features, we saw almost a third occurring with devices without safety features," says **Angela K. Laramie**, MPH, epidemiologist with the Sharps Injury Surveillance Project in the Massachusetts Department of Public Health in Boston.

"These devices with safety features have been available for a long time," she says. "There's no question that they should be used."

Moving forward to reduce needlesticks may require a renewed national focus, says **June M. Fisher**, MD, director of the TDICT (Training for Development of Innovative Control Technologies) Project in San Francisco.

"A number of people agree that we're at a plateau. I think we need to seek a national consensus that looks at why we're at that plateau and what needs to be done," she says. "We need to think of an agenda overall for health care worker health and safety."

One in five sticks from suture needles

If sharps injury rates are hardly budging, employee health professionals can look to one major culprit: the operating room.

It's clearly impossible to completely remove the risk in the operating room, where surgeons work in small spaces with sharp instruments. But suture needles account for a high portion of sharps injuries — 21% in the Texas data and 22% in EPINet. In surgical settings, according to 2006 EPINet data, 45% of injuries occurred while suturing.

Blunt suture needles could be substituted for sharp ones in as many as 60% of those cases, reducing the risk to surgeons, says **Jane Perry**, MA, associate director of the safety center. The quality and selection of suture needles has improved, but many surgeons remain reluctant to use them.

"There's hardly been any change in the market for blunt suture needles over the last five years," she says. "Until there is a change in OR injury rates, you will see relative stability in the [overall sharps injury] rates.

"With regards to needlestick injury rates, there

are two important facts to keep in mind," she continues. "First, OR settings account for more than a third of sharps injuries in hospitals overall. What does or doesn't happen in ORs in terms of safety devices and health care worker protection will have a sizeable impact on institutional needlestick rates.

"Second, while there was a large decline in injury rates for most clinical settings after the Needlestick Safety and Prevention Act, there was no change in rates for surgical settings. Until compliance with implementation of safety devices — and specifically blunt suture needles — improves in ORs, we're unlikely to see further declines in rates," she says.

The OR poses some unique challenges for sharps safety; there still are procedures for which no safety device exists, Perry notes.

Yet too often, surgery personnel open prepackaged kits and discover syringes with a fixed, conventional needle.

"[Employers] need to go through an inventory of what's used in the kits, then negotiate for kits with safety devices," says Laramie.

Some hospitals choose to purchase the less expensive kits with nonsafety devices and to switch the devices with their own safety versions. Yet as long as less expensive kits are available with conventional devices, there is a chance that some workers may not replace them with a safety device, says **Gina Pugliese**, vice president of the Premier Safety Institute, part of the Charlotte, NC-based Premier Inc. health care alliance.

Sometimes, health care providers receive their orders and discover the devices don't have safety features or a way to attach a safety needle — as was the case with Fluvirin pre-filled syringes manufactured by Novartis Vaccines. **(See related article on cover.)**

"One of the biggest challenges in needle safety is circumstances in which hospitals can't control the sharps safety," says Pugliese.

Unsafe safety sharps?

Still, there's plenty of room for improvement that hospitals *can* influence. Most sharps injuries that occur after the use of the safety device indicate that the safety mechanism wasn't activated. That can be a training problem, a lack of safety culture, or employee dissatisfaction with the device.

Employers need to monitor the use of devices, especially after a new device is selected, says **Kathryn Gardner**, DrPH, RNC, CIC, CPHQ, bloodborne pathogen nurse consultant with the Texas Department of State Health Services in Austin.

"When a worksite begins to use a new device, it's critical for them not only to provide the education but to follow up to make sure that the employees know how to use it correctly — and they actually use it correctly," she says.

For example, in Texas public facilities, 75% of injuries with winged steel needles occurred with devices that had safety features. "The winged steel needle [butterfly], even if safety-engineered, is obviously a device with sharps injury risks," Gardner concluded in her analysis.

In Massachusetts hospitals in 2005, 18% of reported injuries involving hypodermic needles attached to disposable syringes with safety features occurred while the worker was activating the safety device." If it's not intuitive how to use the safety feature, people may not activate it, or they may get injured while activating it," says Laramie. "Is that a problem with the design of the device, or do people need more training?"

That is a question that employers should ask as they reevaluate their devices and track their injury rates, she says.

Meanwhile, there's one other issue that can confound the trends in needlestick rates: Underreporting. Needlesticks are notoriously underreported, despite the need for evaluation and follow-up. A focus on sharps safety should include an emphasis on reporting — but that also can affect a hospital's rates.

"It's not unusual when you start to tackle an issue within a facility to even see a small climb in the number of injuries," says Laramie.

Ultimately, that better reporting can point to weaknesses in the sharps safety program — and can lead to improvements and a real reduction in needlestick rates, she says. ■

Needlestick benchmark can be safety 'snapshot'

Internal comparisons may be most helpful

Suppose your needlesticks rose this year compared to last year. That doesn't sound so good. Clearly things are not going in the right direction. But you need more information to understand

what's happening — a benchmark for your needlesticks.

First, you need to calculate a needlestick rate. If your numbers rose but your procedures or bed count grew even higher, then your rate may have actually gone down.

You also need to dig a little deeper into the dynamic of your sharps safety program. "If you're going to assess how successful your program is, the number of injuries has to be just one component," says **Angela K. Laramie**, MPH, epidemiologist with the Sharps Injury Surveillance Project in the Massachusetts Department of Public Health in Boston. "Evaluate whether your injury reporting has changed in any way or whether frontline employees are getting more involved in device selection.

"If you use injuries as the sole measure of success of a program, then you risk driving reporting underground," she says. "You risk that people aren't going to want to report their injury, and that's counterproductive because we miss the opportunity to provide appropriate care to injured employees and to learn more about those injuries so we can prevent them in the future."

Yet in the quest for injury reduction, rates can be useful, if they're properly evaluated. A comparison with a national database, such as the EPINet network of the International Health care Worker Safety Center at the University of Virginia in Charlottesville can bolster a case for more resources to tackle sharps safety. "Oftentimes, hospital administrators will want to know, 'How do we compare to other institutions around the country?'" says associate director **Jane Perry**, MA.

Numerator: Number of needlesticks

So how do you calculate your rates? What, exactly, should be in your numerator and denominator?

Clearly, your numerator will be the number of needlesticks — but you may want to look specifically at units such as med-surg, emergency department, or the intensive care unit. Your denominator will vary depending on what you are trying to measure.

Do you want to know who is sustaining the most needlesticks? You'll need to use FTEs to compare occupational groups, such as nurses, phlebotomists, and physicians. How frequently do they occur? In some units, you may be able to use the number of procedures. Which devices or device categories are associated with the most needlesticks? This is a tricky question, but you may be able to obtain purchasing data from materials management.

Those internal markers will provide information for action. "You should benchmark against your own data and really look at yourself over time," says Laramie. "It's important to take a broad assessment of what's happening hospital-wide, but I think it's more important to take a few devices and really look at where those injuries are occurring."

Public hospitals in Texas and all acute care and chronic care hospitals in Massachusetts are required to report their bloodborne pathogen exposures. These and other national databases collect information per 100 beds. For example, if you had 350 needlesticks in one year and you had an average of 800 occupied beds, your rate would be 350 divided by 800, multiplied by 100, or 44 per 100 occupied beds.

"You can use the national or state based data to get a sense of what is going on," says Laramie. But she cautions that you need to compare yourself to similar facilities. EPINet, for example, reports its data for teaching and nonteaching hospitals.

"Teaching hospitals always have higher rates because they have more trainees and they're often doing more intensive procedures using more needles," says Perry.

Different populations, procedures

Different patient populations may mean hospitals perform different types of procedures, so other factors ranging from geography to size may influence needlesticks, Laramie says.

It also is important not to view a national or state benchmark as a goal or best practice. It is just a snapshot of current performance. If your rate is better than the average, that doesn't necessarily mean your rate is "good" or "acceptable." Your goal should be continual improvement.

"I don't want anybody to say in the state of Massachusetts 40% of injuries happened to nurses and at our hospital it was only 30%, so we're doing really well," Laramie says. "I don't like our data to be used as a benchmark. The benchmark assumes an acceptable level or a goal. My data is not a goal. It is a picture of what exists."

After all, the goal is not to do better than most hospitals on needlesticks. The goal, notes Laramie, is zero.

In fact, a low number of needlesticks actually can be a bad thing — if the numbers are low

because health care workers are reluctant or uninformed about reporting, she notes. "Get employees involved as much as you can [in sharps safety]," she says. "If you see a low number of injuries, be aware that it could say something about the underreporting in the facility." ■

Cut-rate deal: Focus on sharps safety pays off

Needlestick rate drops by about 50% in 2 years

You can't stop needlesticks just by buying a safety device. Preventing sharps injuries requires a sustained commitment to device selection and training.

That is the lesson learned by St. Joseph Hospital in Bellingham, WA, which renewed its focus on sharps safety when its sharps injury rate slowly began to climb. The hospital brought its rate from 30.5 bloodborne pathogen exposures per 100 occupied beds in 2006 to 12.8 for the first three-quarters of 2008, putting the hospital on track for a reduction of about 50% in just two years.

The key to success? "Persistence, patience and commitment to reducing injury," says **Lori Wilkinson**, RN, BSN, COHN-S/CM, occupational health manager.

St. Joseph had been monitoring its sharps injury rate by comparing annual data to EPINet, a reporting network of the International Health care Worker Safety Center at the University of Virginia in Charlottesville. When its needlestick rate rose, the hospital launched a process improvement effort, including a root-cause analysis of injuries.

A process improvement team was created with staff from the units with the top injury rates — the operating room, medical units, emergency department, cardiovascular unit, and intensive care unit — and included representatives from laboratory services and materials management. "We tried to do some assessment of what was causing the problem," says **Monica Grimes**, RN, BSN, COHN-S/CM, who served as the process owner for the improvement team. "We were very committed to doing accident analysis on every needlestick that occurred."

The hospital learned that improper use of the safety feature on winged needle blood drawing devices had led to increased injuries. Intravenous starts also were a problem area.

CNE *questions*

1. According to Jeanne M. Santoli, MD, MPH, why were Novartis FluVirin pre-filled syringes shipped with fixed needles that had no safety device?
A. No safety product was available.
B. Pre-filled syringes don't require a safety needle.
C. Customers requested the syringes with fixed needles.
D. The CDC contract didn't specify safety devices.

2. According to data in Texas and Massachusetts, about how many sharps injuries involve devices that lack safety features?
A. One in 10.
B. One-quarter.
C. Half.
D. The states don't collect data on nonsafety devices.

3. What does the EPINet network of the International Healthcare Worker Safety Center at the University of Virginia in Charlottesville use as a denominator for benchmarking sharps injuries?
A. Patient beds
B. Procedures
C. Purchased devices
D. Blood draws

4. At St. Joseph Hospital, sharps injuries initially went down because:
A. the hospital placed a greater focus on the problem.
B. the hospital immediately switched sharps devices.
C. the hospital stopped using conventional devices.
D. employees who sustained needlesticks were fired.

Answer Key: 1. D; 2. C; 3. A; 4. A.

CNE instructions

Nurses participate in this continuing 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. ■

The team invited vendors to present their safety devices and selected devices with passive activation features. Trials with frontline users in the targeted departments were conducted in the fall of 2007.

"The process improvement team was convinced that we needed to really have all of our stakeholders involved," says **Lori Wilkinson**, RN, BSN, COHN-S/CM, occupational health manager. "They solicited feedback from wide range of units and users."

Training, trials lead to improvement

During the nearly year-long project, the sharps safety process improvement team had a startling discovery: Needlesticks declined by 21% even before the new devices were implemented, a decrease that began during the injury analysis phase of the project.

"Our belief is that the energy and conversations around the process led to better technique," says Wilkinson. "Increasing the focus made a difference."

It also pointed to the need for better training. The team drafted a new sharps safety policy and, with the support of hospital leadership, developed a mandatory training program. Every user of sharps devices needed to complete training and show mastery of competencies on all sharps devices.

Previously, vendors would visit units to demonstrate new devices. But with its more comprehensive focus, the clinical nurse educators provided multiple scheduled training opportunities. Each 30-minute training was conducted off the unit, in small groups of five employees and one educator. Employees could ask questions and demonstrated competency to use each device safely. The training was concentrated over a three-week period in January 2008.

With the training completed, the hospital implemented the BD SafetyGlide syringe, BD Nexiva Closed IV Catheter System and the BD Vacutainer Winged Safety Push Button Blood Collection device. "This was the biggest device change we've made in quite some years," says Wilkinson.

Not everything went smoothly, however. The process improvement team sought input from all stakeholders, but some groups did not adequately trial the devices. After the new IV system was implemented, some anesthesiologists were concerned about the flow rates. "Anesthesia did not feel part of this decision," concedes Wilkinson, "and they wanted to ensure best practice for patient safety."

The anesthesia and injury reduction team met with the vendor, discussed issues, and again trialed the devices along with another safe IV needle that anesthesiologists were interested in using for higher flow rates. Ultimately, both devices were adopted. Meanwhile, clinical nurse educators continued to make rounds on the nursing units to identify any barriers, assist with process changes, and provide coaching on technique.

A key lesson learned is that future process improvement efforts will not move forward until *all* stakeholders are fully engaged. The bottom line is you've got to get skilled users to use and assess thoroughly before they will commit to that product." she says.

Annual review required

The Bloodborne Pathogen Standard of the U.S. Occupational Safety and Health Administration requires annual review of sharps safety devices. At St. Joseph, that review regularly occurred. "However, the increase in needlestick injuries spurred us to not only evaluate our devices, but to look at our safety culture around the devices, and that is where we were able to make a difference," says Wilkinson.

"It was also important to navigate the process changes after implementation — during the initial use period, there were valid questions and barriers identified. Clinical educators closely partnered with materials management, occupational health, and our vendor to problem-solve any issues.

"We continue to look for opportunity for injury reduction, and look at our data around all injuries monthly," says Wilkinson.

COMING IN FUTURE MONTHS

- Injury sparks invention for safe patient handling
- NIOSH advice on PPE for chemotherapy agents
- Justifying the value of employee health
- Streamlining pre-placement exams
- Using 'house supervisors' to cover off-hours

She also collaborates with colleagues at other hospitals to learn about their experiences with safety devices. And, within the hospital, she feels a momentum that can be used to target other safety issues.

"Because we worked together to problem-solve [through the process improvement effort], we really built some strong relationships that have assisted us in safe patient handling and other safety efforts," Wilkinson says. ■

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 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. ■