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Moving the Sharps Safety Agenda Forward

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List of Supporting Organizations for Moving the Sharps Safety Agenda Forward in the United States: Consensus Statement and Call to Action

Background: The **International Healthcare Worker Safety Center** (IHWSC) at the University of Virginia drafted and began circulating the consensus statement on sharps safety in the summer of 2011. The **American Nurses Association** (ANA) endorsed the statement in November 2011, and worked closely with the IHWSC to reach the ANA's organizational affiliate members and other professional groups. The following organizations have officially endorsed the statement as of April 2012.

Nursing organizations:

- Academy of Medical-Surgical Nurses
- Academy of Neonatal Nursing
- American Academy of Ambulatory Care Nursing
- American Association of Critical-Care Nurses
- American Association of Nurse Anesthetists
- American Association of Occupational Health Nurses
- American Nurses Association
- Association of Occupational Health Professionals in Healthcare
- Association of peri-Operative Registered Nurses
- Association of Rehabilitation Nurses
- Infusion Nurses Society
- National Association of Neonatal Nurses
- Nurses Organization of Veterans Affairs
- Wound, Ostomy, Continence Nurses Society

Other organizations:

- AdvaMed (medical device industry trade association)
- Center for Phlebotomy Education
- International Healthcare Worker Safety Center, University of Virginia
- Organization for Safety, Asepsis, and Prevention
- Premier healthcare alliance
- Safe in Common

To reduce sharps injuries, all of us must create a culture of safety in our workplaces

In the 12 years since passage of the federal Needlestick Safety and Prevention Act (NSPA), much progress has been made to reduce the risk of healthcare worker exposure to bloodborne pathogens. But significant challenges remain. Injuries from contaminated needles and other sharps that can transmit infectious diseases are preventable and shouldn't be tolerated as a cost of doing business by healthcare organizations charged with ensuring safety and preventing harm—to patients, employees, and the public.

We know compliance with NSPA isn't universal and work remains to help ensure that preventable sharps injuries don't occur. It's up to *all of us* to create the culture of safety necessary to minimize incidents. "All of us" includes government enforcers, health advocates, safety engineers, and hospital personnel—from executives to educators to nurses to housekeepers. That safety culture must be proactive and place a priority on prevention, workers' health, education, and training.

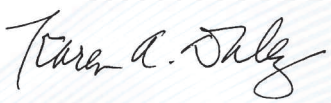
In ANA's 2011 Health and Safety Survey, 96% of nurse respondents indicated that their facilities provide safe needle devices; this represents a significant improvement from 82% in 2001. Of the nurses who said their facilities provide safety needles, 76% said they use them frequently; that's not enough. What's more, among nurses who said safety needles were available at work, 19% stated that nurses weren't involved in the selection process while 43% didn't know if nurses were involved. NSPA requires employers to give direct-care nurses a say in needle selection and evaluation. It's critical for nurses to exercise these rights, because involvement in this process allows nurses to select products they're more likely to use and, as a result, can reduce the number of injuries.

It's time for all of us to recommit to sharps safety and put it high on our priority list. This *American Nurse Today* supplement highlights this recommitment through the recent Consensus Statement and Call to Action, a collaboration of ANA, the International Healthcare Worker Safety Center at the University of Virginia, and many colleagues across the healthcare spectrum.

The goal of the Consensus Statement is to continue progress in reducing the risk of sharps injuries to healthcare workers. The Call to Action focuses on five pivotal areas in need of attention:

1. improving sharps safety in surgical settings
2. understanding and reducing exposure risks in nonhospital settings (such as physicians' offices, clinics, and home settings)
3. involving frontline workers in the selection of safety devices
4. addressing gaps in available safety devices and encouraging innovative designs and technology
5. enhancing worker education and training.

Besides being the right thing to do, creating and maintaining a culture of safety that minimizes occupational health risks goes a long way toward increasing job satisfaction, which in turn reduces staff turnover. Engaging frontline healthcare workers is a priority in any effort to create a culture of safety—not just for sharps safety but for the general health, safety, and wellness of all healthcare employees, patients, and the public.



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Essential elements of a comprehensive sharps injury-prevention program

The steps outlined below can help facilities significantly reduce sharps injuries.

By Mary Foley, PhD, RN

Since passage of the Needlestick Safety and Prevention Act (NSPA) in 2000, safer needle devices have become widely available in healthcare workplaces and needlestick injuries have declined significantly. Yet on many fronts, sharp injuries haven't been addressed adequately. Healthcare delivery, devices, and demands have changed since 2000, and so has the science of safer devices. Even after the first decade of NSPA, large numbers of healthcare workers remain at serious risk for injury.

The goal of every healthcare facility should be to eliminate the risk of needlestick injuries wherever possible. The March 2012 report "Moving the Sharps Safety Agenda Forward in the United States: Consensus Statement and Call to Action" by the International Healthcare Worker Safety Center (IHWSC) aimed to energize comprehensive and expanded efforts to improve the safety of all healthcare workers. The document places special emphasis on workers in surgical or nonhospital settings. (For the full report, see "Consensus Statement and Call to Action" in this supplement.)

IHWSC, the American Nurses Association, and 18 other healthcare and industry groups have focused on several areas of sharps injuries that still need attention. This article also discusses key issues that must be addressed by facilities hoping to achieve a universal and comprehensive reduction in sharps injuries.

Involve multiple disciplines in the prevention team

Healthcare facilities should establish multidisciplinary injury-prevention teams with representatives from all disciplines at risk for harm from bloodborne pathogen exposure. Frontline personnel (nonmanagerial employees responsible for direct patient care) should have the greatest level of representation. Other representatives should come from senior procurement administration, pharmacies, nursing unit management, staff safety, quality management, and infection control. "Downstream" at-risk workers, such as cleaning staff and those responsible for sharps disposal, should be represented as well.

Have an exposure control plan

Healthcare facilities should have a written exposure control plan, with a hard copy available to employees or their representatives within 15 working days of a request. The plan should be reviewed and updated annually or more often as needed, whenever new or modified procedures are adopted or employee positions are revised in a way that creates new potential exposures. The review should include an examination of the most recent technological advances in needle devices. Workers should be made aware of the plan location and the procedures to follow should a sharps injury occur.

Educate frontline workers

Many needlestick injuries occur because workers haven't received adequate training on correct use of safety devices. While safety equipment should function as closely as possible to standard routine procedures, employee training

Frontline workers need to be involved in evaluating and selecting needle devices; many nurses and employees don't realize that this right to be involved is part of NSPA.

is always recommended. Employees should receive education and training in the use of needle devices, injury prevention (such as how to dispose of needles properly), and infection control. All employees at risk for occupational exposure to bloodborne pathogens should receive interactive training on use of safer devices, safer work practices, and personal protective equipment (PPE) from a knowledgeable source. Such training should occur at the time of hiring and at least once yearly, or whenever the employee's tasks or procedures are modified. Training must be provided during work hours at no cost, and employers must keep training records for 3 years.

Frontline workers need to be involved in evaluating and selecting needle devices; many nurses and employees don't realize that

this right to be involved is part of NSPA. (For information on how to evaluate and select a device, see "Choosing wisely: Resources for selecting sharps safety devices" in this supplement.)

Take additional control measures

Additional control measures are especially important in surgical settings and other settings where traditional needle and syringe–based solutions won't work, as well as nonhospital settings lacking the equipment and disposal infrastructure of hospitals. These control measures include the following:

- *Postexposure evaluation and follow-up*. Within 2 hours of a sharps injury or other potential exposure to bloodborne pathogens, employees should have access to postexposure evaluation and follow up that conforms to testing and prophylaxis guidelines of the Centers for Disease Control and Prevention (CDC). The hepatitis B vaccine should be made available at no cost, with titer verification as recommended.
- *Sharps purchasing decisions*. Purchasing decisions for sharps should be based on the products' proven safety and efficacy.
- *Prohibited work practices*. Facilities should prohibit such practices as bending, recapping, and removing needles, unless required by a specific medical or dental procedure.
- *Cleaning of work surfaces*. After contact with blood and other infectious body fluids, work surfaces should be cleaned and decontaminated according to infection-control guidelines.
- *PPE provision*. Employers must provide PPE, including gloves, gowns, goggles, masks, and face shields, in sizes that fit all workers. PPE must be readily available and of good quality; nonlatex alternatives must be provided.

Use appropriate equipment selection criteria

The bloodborne pathogens standard of the Occupational Safety and Health Administration (OSHA) states that employers must use engineering and work-practice controls that eliminate occupational exposure or reduce it to the lowest feasible extent. OSHA classifies safety devices into the following categories:

- *Passive* safety devices remain in effect before, during and after use; workers do not have to activate them.
- *Active* devices require the worker to activate the safety mechanism.
- *Integrated* safety devices have a built-in safety feature that can't be removed; this design feature usually is preferred.
- An *accessory* device is a safety feature that is external to the device and must be carried or be temporarily or permanently affixed to the point of use.

Some experts believe many needlestick injuries result from nonactivation of the safety device. Perception of poor compliance with

Healthcare personnel should report needlestick injuries whenever they occur.

activation influences many hospitals to select devices with a semiautomatic or passive activation feature.

Enforce sharps injury reporting and records

Healthcare personnel should report needlestick injuries whenever they occur, and employers should maintain detailed records of all occupational exposures. OSHA and some states require a record of the brand and manufacturer of any device involved in a worker injury. To effectively monitor injuries, the following information should be recorded:

- unique identification number for the incident (to protect worker confidentiality)
- incident date and time
- injured worker's occupation
- department or work area where the incident occurred
- type and brand of device involved
- presence or absence of an engineered sharps injury-prevention feature on the device involved
- purpose or procedure for which the device was being used
- when and how the injury occurred.

Other data that can enhance injury analysis include whether the device had a passive or active safety feature; whether the safety feature (if present) was fully integrated within the device and activated; whether the injury occurred before use, during use, while attempting to activate the safety mechanism, or after use; and whether the injury occurred while the worker followed standard recommended procedures.

Embrace a culture of safety

Needlestick injuries aren't the sole transmission mode for bloodborne pathogens. Exposure also can occur to nonintact skin as well as mucous membranes of the eyes, nose, and throat. Other modes include aerosolization and splash or spatter of blood, tissue residue, or medication, which may occur with certain safety devices and reuse of nonsterile medical equipment. Although sharps injury prevention has gained renewed attention, healthcare facilities should embrace a culture of safety that seeks to minimize the risk of occupational exposure of *all* types in *all* areas.

The CDC recognizes the importance of a culture of safety, making it an integral part of its "Stop Sticks" campaign. (See www.cdc.gov/niosh/stopsticks/safetyculture.html.) The campaign emphasizes that maintaining a culture of safety helps protect patients, workers, and others in the healthcare environment. In such a culture, managers and nonmanagerial employees alike must commit to ensuring a safe work environment.

The CDC lists five strategies for creating a safety culture:

- Ensure organizational commitment.
- Involve workers in planning and implementing activities that promote a safe healthcare environment.
- Identify and remove sharps injury hazards in the work environment.
- Develop feedback systems to increase safety awareness and promote individual accountability.

To achieve universal safety, all advocates must work together to unify agendas and maximize efforts to protect not just all healthcare workers but patients and families as well. Only then will we see the best results. ▲

Selected references

Centers for Disease Control and Prevention. The STOP STICKS Campaign: Safety Culture. Last updated June 24, 2011. www.cdc.gov/niosh/stopsticks/safetyculture.html. Accessed August 7, 2012.

Centers for Disease Control and Prevention. *Workbook for Designing, Implementing, and Evaluating a Sharps Injury Prevention Program.* 2008. www.cdc.gov/sharpssafety/pdf/sharpsworkbook_2008.pdf. Accessed August 7, 2012.

International Healthcare Worker Safety Center, University of Virginia. Moving the sharps safety agenda forward in the United States: consensus statement and call to action. 2012. http://www.nursingworld.org/MainMenuCategories/WorkplaceSafety/SafeNeedles/SharpsSafety/ConsensusStatement-SharpsSafety.pdf. Accessed August 7, 2012.

Jagger J, Perry J. Comparison of EPINet data for 1993 and 2001 shows marked decline in needlestick injury rates. *Adv Exposure Prevent.* 2003;6(3):25-7.

Jagger J, Perry J, Gomaa A, Phillips EK. The impact of U.S. policies to protect healthcare workers from bloodborne pathogens: the critical role of safety-engineered devices. *J Infect Public Health.* 2008;1(2):62-71.

National Institute for Occupational Safety and Health. Alert: Preventing needlestick injuries in health care settings. November 1999. DHHS (NIOSH) Publication No. 2000.108.

Occupational Safety and Health Administration. Standard 1910.1030. OSHA Instruction: enforcement procedures for the occupational exposure to bloodborne pathogens. November 27, 2001.

Panlilio A, Orelien JG, Srivastava PU, et al: NaSH Surveillance Group; EPINet Data Sharing Network. Estimate of the annual number of percutaneous injuries among hospital-based healthcare workers in the United States, 1997-1998. *Infect Control Hosp Epidemiol.* 2004;25(7):556-62.

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Reducing sharps injuries in nonhospital settings

No matter how small the facility or agency, all employers are required to take measures that reduce employees' exposure risks.

By Elise Handelman, MEd, RN, COHN-S, Jane L. Perry, BA, MA, and Ginger Parker, BA, MBA

Recently, one of this article's coauthors had a nuclear medicine scan at an outpatient facility. She noticed the nurse used extreme caution when handling the syringe and needle loaded with the radioactive isotope, which had been carried in a lead box and handled with great care. But after the nurse administered the isotope, she used her bare hands to recap the conventional, hollow-bore needle that had just been in the patient's vein.

How could this situation arise, in violation of the Needlestick Prevention Act—especially when handling such a highly contaminated device? This law applies to nonhospital settings as well as hospitals. In search of answers to questions like this, we conducted a survey of nonhospital workers to learn more about their unique issues. This article summarizes survey results and describes steps workers in nonhospital settings can take to reduce their risk of exposure to bloodborne pathogens.

Defining the problem

As more health care is delivered outside of hospitals to sicker patients undergoing more invasive procedures than ever, the need to reduce needlestick injuries in these settings is emerging as a key occupational safety issue. By a conservative estimate, about 40% of the nation's 2.3 million registered nurses are employed in nonhospital settings.

In 2001, the Occupational Safety and Health Administration (OSHA) published and began enforcing a revised version of the bloodborne pathogens standard (BPS). Since then, use of safety-engineered devices has risen significantly. (See *How OSHA defines safety-engineered devices*.)

The Centers for Disease Control and Prevention estimates that more than 380,000 parenteral blood exposures occur annually in U.S. healthcare workers. This means about 1 in 10 healthcare workers experiences a needlestick injury each year. Underreporting of needlesticks continues to hover around 40%.

The good news: The BPS has brought a significant reduction in *hospital* needlestick injuries. With hospitals generally moving in the right direction, needlestick prevention efforts have started to focus on nonhospital healthcare facilities, where such injuries are harder to track and injury rates are less well known. Nonhospital facilities encompass a wide variety of settings, including ambulatory and home care; outpatient, occupational health and public health clinics; surgery, dialysis, and rehabilitation

How OSHA defines safety-engineered devices

In its bloodborne pathogens standard 1910.1030, the Occupational Safety and Health Administration (OSHA) defines a sharp with engineered sharps-injury protections as a nonneedle sharp or a needle device used to withdraw body fluids, access a vein or artery, or administer medications or other fluids, with a built-in safety feature or mechanism that effectively reduces the risk of an exposure incident. For more information, visit www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051.

centers; correctional facilities; nursing homes; and dental, medical, and nursing offices.

Some nonhospital employers may believe they're exempt from the BPS because of their facility's small size. However, *all* healthcare employers, including medical or dental offices and small clinics, are required to comply with the standard. Noncompliance puts healthcare workers at risk and can be costly to employers. Besides incurring OSHA fines (which can run into thousands of dollars), an occupational injury or infection can increase employers' costs by:

- raising insurance rates, especially for self-insured employers
- increasing workers' compensation payouts
- necessitating legal fees to defend against lawsuits by an injured worker or the worker's union
- causing lost time at work by injured or exposed employees who need treatment and follow-up
- requiring the hiring of temporary or permanent replacement workers
- bringing negative publicity, which can damage the employer's reputation.

On the other hand, complying with the BPS can bring multiple benefits, such as avoiding the increased costs described above and promoting a culture of safety that helps employers stay competitive in recruiting and retaining skilled employees. These factors should provide ample motivation for employers to get on board and improve their compliance with OSHA regulations.

Survey of healthcare professionals in nonhospital settings

Reaching nonhospital nurses can be challenging, as many work in small clinical settings or as sole practitioners. So when the International Healthcare Worker Safety Center at the University of Virginia sponsored a webinar ("Achieving sharps safety compliance in nonhospital healthcare settings") in August 2011, the authors took the opportunity to conduct a follow-up survey of participants to gather information on their attitudes toward and knowledge of needle safety and sharps injury prevention. After the webinar, we e-mailed the 571 registrants an invitation to take an online survey; of those contacted, 218 (38%) completed the survey. The resulting data, although not based on a statistically derived sample, provide interesting insights on sharps safety in nonhospital settings. Below are the survey questions and a summary of our findings:

- **What is the best description of your worksite?** Respondents worked in a wide variety of settings. The most common were physician offices, outpatient clinics, ambulatory care, and occupational health settings, followed closely by surgery centers and long-term care/rehabilitation centers. The largest occupational group in the survey (n = 62) identified themselves as nurses. Other occupations represented were administrators (n = 41), infection-control practitioners (n = 38), safety professionals (n = 35), and educators/trainers (n = 31).
- **Does your facility routinely use safety-engineered devices that protect healthcare workers from needlestick injuries?** Almost 98% of respondents were aware of the BPS requirement to use safety-engineered devices. More than 96% of those with direct patient contact said they always or usually used safety-engineered devices, and about 90% indicated they always or usually were involved in selection of new devices. But nearly 10% said they were rarely or never involved in selection. OSHA requires that nonmanagerial employees responsible for direct patient care have input into device selection. This should be a focus for compliance improvement efforts in nonhospital settings.
- **Do you feel confident in your ability to evaluate new safety-engineered devices that might be appropriate in your facility?** Less than half of the respondents who were involved in evaluating new devices felt completely confident in their ability to evaluate them. More than half (59.7%) responded they would like resource tools to be made available and/or would like to receive more training on this process. Clearly, this is an area of need.
- **What do you think are some of the barriers to using safety-engineered devices in nonhospital healthcare facilities?** Encouragingly, about 30% of respondents indicated they saw no barriers to using such de-

vices in their workplaces, and said they used *only* safety devices. But nearly 20% said their managers (owners, physicians, or dentists) don't consider use of these devices to be a priority. Almost one-third agreed that the higher cost of the devices is prohibitive compared to that of conventional nonsafety devices. Another 17% indicated that the safety-engineered devices currently available don't meet their clinical needs. Only six respondents perceived the risk of exposure to bloodborne pathogens in nonhospital settings as low.

Analysis

Survey respondents, who represented a wide range of nonhospital healthcare settings, were fairly well-educated about needlestick prevention and BPS requirements. Many already were involved in sharps safety efforts in their facilities. Still, their responses clearly indicate some areas where more work is needed.

Responding to a needlestick

When needlesticks occur in nonhospital settings, responding in a timely and appropriate manner is important—although it can be challenging at times. The perception that workers in nonacute-care healthcare settings are at lower risk for bloodborne pathogen transmission than hospital workers is incorrect. Experts agree that the location or clinical setting of a needlestick isn't relevant in assessing transmission risk. What matters is the type of device used (for example, a hollow-bore needle) and nature of the injury (for example, contamination of the device with blood). OSHA requires employees to receive immediate evaluation and follow-up treatment, as appropriate, by a qualified provider after blood exposure, regardless of the healthcare setting.

Action items

Nurses and professional organizations need to renew efforts to reduce needlestick injuries in nonhospital settings. Consider taking the following actions:

- **Increase your involvement in selection of safety-engineered devices.** The BPS—and common sense—dictate participation of nonmanagerial, direct-care nurses. Personnel who use these devices should have a voice in their selection. So take an active interest and get involved in the selection process.
- **Use device evaluation resources to help find and evaluate safety-engineered devices.** Many online resources are available, but workers in nonhospital settings may be unaware of these. Professional organizations for providers in these settings can play a role in getting this critical information to members.
- **Hold employers, managers, and small-practice owners accountable for meeting BPS requirements.** OSHA is clear that employers have a responsibility to evaluate and implement safety-engineered devices. The agency doesn't exempt employers from providing safety-engineered devices on the grounds of cost. File a complaint if your employer doesn't respond to safety concerns, and expect OSHA to respond. Call 1-800-321-OSHA (6742) for information on how to file a complaint.
- **Look for opportunities to collaborate with manufacturers and researchers to ensure new devices meet the unique needs of nonhospital settings.** Many nonhospital settings present unique challenges in healthcare delivery. They may be poorly lit, involve unruly or violent patients, require clinicians to practice in isolated settings with scarce resources, or involve complex procedures previously done only in hospitals. Nurses can provide critical input into device design and selection so their clinical needs are taken into account.
- *Know your facility's plan for needlestick injury response.* Many nonhospital health services are delivered in community-based settings where access to prompt treatment can be challenging. Optimally, evaluation and treatment should occur within 2 hours of a needlestick. Be sure you know how to get prompt and proper care. If you have questions about treatment for a needlestick injury, call the National Clinicians' Post-Exposure Prophylaxis hotline (PEPLine) at 1-888-448-4911, available daily from 9 A.M. to 2 A.M. EST.

By working together with professional organizations, manufacturers, researchers, educators, and regulators, we can improve the safety and health of all workers in nonhospital settings. ▲

Visit www.AmericanNurseToday.com/Archives.aspx for a list of selected references.

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Practical strategies to prevent surgical sharps injuries

Many facilities still don't follow sharps safety best practices and continue to underreport needlestick injuries.

By Charlotte Guglielmi, MA, BSN, RN, CNOR, and Mary J. Ogg, MSN, RN, CNOR

Perioperative professionals are among the healthcare professionals at highest risk for sharps injuries—getting stuck by a suture needle or cut by a scalpel. About 30% of sharps injuries occur in surgical settings. What's more, since passage of the Needlestick Safety and Prevention Act in 2000, the rate of nonsurgical sharps injuries has declined while surgical sharps injuries have increased 6.5%.

Given these alarming statistics, we urge all nurses to review the American Nurses Association's (ANA) Code of Ethics, provisions 5 and 6:

> *The nurse owes the same duties to self as to others, including the responsibility to preserve integrity and safety, to maintain competence, and to continue personal and professional growth.*
>
> *The nurse participates in establishing, maintaining and improving health care environments and conditions of employment conducive to the provision of quality health care and consistent with the values of the profession through individual and collective action.*

These passages underscore our responsibility to keep ourselves safe and provide high-quality health care. To highlight exactly how we can do this, this article explores the current state of sharps safety practice and barriers to best practices, and outlines the key elements of an effective perioperative sharps safety plan and policy.

Safety measures and barriers to sharps safety

Since 2000, numerous improvements have been made in safety scalpels and blunt-tip suture needle technology. Nurses, surgeons, and technologists have received many hours of education and training on double-gloving, the neutral (safe) passing zone, and appropriate use of blunt-tip suture needle technology. Yet surveys by the Association of PeriOperative Registered Nurses (AORN) and others show that many facilities still don't follow best practices for sharps safety and vastly underreport needlestick injuries.

For instance, in 2011 AORN surveyed 1,111 perioperative staff nurses and unit directors on surgical sharps safety. Two of five respondents (43%) said either their organization didn't have a sharps-prevention education plan or they didn't know if it did. About one-third (30%) said they didn't double-glove. When asked to identify obstacles to compliance with sharps safety best practices, 55% cited the fact that conventional sharp items are readily available; 52% cited lack of multidisciplinary support for sharps safety.

This isn't surprising. While working in various facilities over the years, we've found significant barriers to implementing sharps safety plans and policies. These include organizational resistance to change; surgeons' perceptions of the quality of safety needles; nurse intimidation and sense of powerlessness; the perception that safety costs more; and inaccurate beliefs, including "It's not going to happen to me." Many people have suffered sharps injuries and haven't contracted an illness, so they erroneously think they're invincible.

To make best practices a reality, nurses should first get buy-in from the entire perioperative team (surgeons, technologists, and managers) by citing statistics, Occupational Safety and Health

Administration (OSHA) regulations, and AORN-recommended practices. Next, they should use their champions to win administrative support for change. Finally, nurses should form a multidisciplinary team—along with physicians, the hospital safety officer, and representatives from risk management, work health, and infection control—to write and execute sharps injury-prevention plans and policies.

The case for blunt-tip suture needles

An analysis of injury surveillance data from 87 U.S. hospitals from 1993 to 2006 found 37.1% of surgical injuries occurred in surgical technicians, 30.3% in operating-room (OR) nurses, 17% in surgical residents and fellows, and 15.6% in surgeons. Injuries to nurses and technicians most often occurred when they passed or disassembled devices and during or after device disposal. Overall, suture needles were the most common cause of percutaneous injury in the OR, involved in up to 43% of such injuries.

Blunt-tip suture needles, available in almost all sizes and materials, are part of the solution. Although they require a bit more directed force than sharper needles, they can be used to suture less-dense tissue, such as muscle, fascia, and subcutaneous tissue. Their use was recommended in a joint safety communication issued in May 2012 by OSHA, the Food and Drug Administration, and the National Institute for Occupational Safety and Health: "Although blunt-tip suture needles currently cost some 70 cents more than their standard suture needle counterparts, the benefits of reducing the risk of serious and potentially fatal bloodborne infections for healthcare personnel support their use when clinically appropriate." The agencies strongly encourage healthcare professionals in surgical settings to use blunt-tip suture needles when appropriate.

Safe practices call for nurses to get involved in the solution. To get started, nurses should lead efforts to ensure that employers provide a selection of sutures in blunt-tip needle sizes comparable to previously used sharp suture needles. They should partner with materials management and worker health representatives, who can perform a cost analysis and analyze the financial implications of the more expensive blunt-tip suture needles versus the costs incurred from sharps injuries.

As a next step, nurses should update surgeons' preference cards and list blunt needles on every card. They should work with suture company representatives to provide charts listing comparable needle sizes. Finally, nurses should identify a surgeon who uses blunt needles and is willing to champion the cause.

Safety-engineered devices

Scalpels are responsible for up to 17% of surgical sharps injuries—the second most frequent cause of these injuries. The solution is to use safety scalpels, which come in two forms: sheathed and retractable. Sheathed scalpels have a retractable plastic case that encloses the blade before and after use. Retractable scalpels let the surgeon or scrub person slide the blade into the handle with one gloved hand. Reported barriers to their use include complaints that safety scalpels lack the same weight and feel as metal-handled scalpels and aren't as usable (the blades aren't as sharp and can't cut as deeply), and the perception that safety scalpels cause more injuries.

To promote safe practices, we recommend OR nurses advocate that their facility join sharps safety device trials to determine if one of the available safety scalpels would work for their facility. To get administrators' buy-in, they should familiarize themselves with OSHA's bloodborne pathogens standard, which requires annual evaluation and documentation of review of the use of engineering and work-practice controls to eliminate exposure to potential injury or reduce it to the lowest extent possible. Safety scalpels are an example of an engineering control that hospitals and ambulatory surgery centers could implement.

Hands-free technique or neutral passing zone

Although getting perioperative team buy-in is optimal, nurses can initiate the hands-free technique (HFT) on their own simply by placing items in a container and passing the container to the surgeon. Research shows HFT reduces sharps injuries by up to 59%.

When using HFT, the scrub nurse places a suitably sized, puncture-resistant container, magnetic pad, or towel on the operating field between herself and the surgeon. The ideal device for HFT (also called a neutral passing zone) is large enough to hold sharps, not easily tipped over, and mobile. One sharp at a time is placed in the neutral zone before and after use. (Blunt instruments can still be passed hand-to-hand.) As the instrument is placed using

the HFT, the user calls out "sharp" to alert the surgical team.

Nurses should educate surgeons and OR staff members about HFT, noting it can be customized to each patient and surgery. For example, surgeons can identify situations when HFT won't work, such as during ophthalmologic or microsurgical procedures. In those cases, nurses still may place instruments directly in the surgeon's hand and then have the instrument returned to the neutral zone.

Double-gloving

Glove punctures increase the risk of bloodborne pathogen transmission during surgery. Some research shows tears and perforations occur 6% to 12% of the time in the OR, especially when gloves are worn for long periods. During invasive surgical procedures, staff should change surgical gloves every 90 to 150 minutes. The Centers for Disease Control and Prevention, American College of Surgeons, Association of Surgical Technologists, and AORN recommend double-gloving during such procedures.

Wearing double gloves or using an indicator glove system helps protect healthcare workers from needlestick injuries. Designed to be used as the underglove, the indicator glove is a different color than a regular glove. Thus, tears and punctures are more easily visible, allowing surgical staff to more easily see breaches in the outer glove. Double-gloving itself acts as a protectant because punctures are more likely to breach the outer glove than the inner glove. Evidence shows that when healthcare workers wore a perforation-indicator glove, 77% of punctures were detected, compared to 21% detected when standard double gloves were worn.

Still, many facilities don't require double-gloving, and even when they do, many perioperative personnel don't double-glove. Resistance stems from the perception that double-gloving reduces their dexterity and tactile sensation. Another obstacle for some is the challenge of obtaining a comfortable fit.

As with other sharps safety techniques, to build compliance for double-gloving, nurses can start by using evidence to educate staff and adapting the technique to the individual facility. No single method of double-gloving works for everyone, so perioperative professionals should try different glove combinations and sizes to find a comfortable fit. Possible combinations include wearing two of the same-size gloves, wearing a half-size larger than the usual-size inner glove, and wearing a half-size larger as the outer glove. It's a matter of personal preference and getting used to a different feel.

The ethics of sharps safety

The OR is unique in the healthcare facility: It requires close teamwork, with team members working under intense time pressure; reliance on limited visual cues; and extensive use of sharp, dangerous instruments. These circumstances put perioperative professionals at special risk for sharps injuries. (See *Support sharps awareness*.)

What's more, healthcare workers aren't the only potential victims of sharps injuries. Surgical patients have open wounds that are susceptible to contamination. If a scrub nurse or surgeon sustains a hand injury, their blood may contaminate patient wounds. Since 1991, 131 documented cases of healthcare worker-to-patient transmission of human immunodeficiency virus, hepatitis B virus, and hepatitis C virus have occurred during invasive surgery worldwide.

Although every healthcare facility is unique, use of blunt-tip suture needles, safety-engineered devices, HFT for passing, and double-gloving have been found to reduce risk of sharps injuries across all settings. To uphold ANA's Code of Ethics, nurses must use available devices for sharps injury prevention, educate others about their importance, and make sure our work environments are as safe as possible for every patient and every worker, every day. ▲

Support sharps awareness

As with all operating-room safety practices, sharps safety must remain a top priority for the surgical team. As a nurse, you can support sharps awareness by disseminating high-quality information, such as quarterly sharps injury data. This information should be published in newsletters, discussed in staff meetings, and shared with the surgery and anesthesia departments.

More broadly, perioperative nurses need to partner with nursing and medical schools to increase student awareness of sharps injury risks and prevention. In many facilities, resident and medical student orientation occurs in partnership with perioperative nurse educators. These sessions can include information on complying with Occupational Safety and Health Administration regulations (especially the bloodborne pathogens standard), requirements for using devices that prevent sharps injuries, and the critical importance of sharps injury reporting.

Selected references

Visit www.AmericanNurseToday.com/Archives/aspx for a list of selected references.

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Moving the Sharps Safety Agenda Forward: Consensus Statement and Call to Action

Note: This Consensus Statement and Call to Action was drafted by members of the steering committee for the conference "Tenth Anniversary of the Needlestick Safety and Prevention Act: Mapping Progress, Charting a Future Path," held in Charlottesville, Virginia, from November 4-6, 2010, and sponsored by the International Healthcare Worker Safety Center at the University of Virginia. The conference was funded in part by a grant from the National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention (1R13OH009924-01). These recommendations are based on the presentations, panels, and informal discussions that took place at the conference. The speakers and participants represented a broad range of stakeholders relevant to the issue of sharps safety, including clinicians, researchers, and healthcare administrators, as well as representatives from government agencies (in particular NIOSH/CDC and OSHA), professional associations, and the medical device industry. The conference also had global participation, with speakers from Asia, Europe and Africa, in addition to both North and South America. We are grateful for the contributions of all. [*See Appendix for list of steering committee members.]*

Introduction

Over the past two decades, the United States (U.S.) has been a global leader in addressing risks to healthcare workers from occupational exposures to bloodborne pathogens, including hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV). Regulatory and legislative measures, such as the Bloodborne Pathogens Standard (BPS) promulgated by the Occupational Safety and Health Administration (OSHA) in 1991 and revised in 2001[1], and the Needlestick Safety and Prevention Act (NSPA) of 2000[2], have been effective in significantly reducing needlesticks and blood exposures, as well as the risk of infection from bloodborne viruses, among healthcare workers.[3] Areas covered by these regulations include sharps disposal practices, evaluation and selection of safety-engineered sharp devices and personal protective equipment, training, recordkeeping for needlestick injuries, HBV vaccination, and post-exposure follow-up. Medical device manufacturers, in the U.S. and other countries, have also played an important role in reducing sharps injury risks to U.S. healthcare workers by developing innovative safety-engineered technology in a broad range of product categories.

While substantial progress has been made, however, preventable sharps injuries and blood exposures continue to occur in U.S. healthcare settings. In 2001-2002, following passage of the NSPA and subsequent revisions to the BPS, a significant decline in sharps injury rates occurred; since then, however, injury rates have leveled off—and in some settings, such as surgery, gone up.[4] In an increasingly complex and changing healthcare environment, we need a renewed commitment to achieve further progress.

Data from two large, multihospital sharps injury surveillance networks provide a picture of where we are today: the EPINet Sharps Injury Surveillance research group (EPINet-SIS) coordinated by the International Healthcare Worker Safety Center at the University of Virginia[5], and the Massachusetts Sharps Injury Surveillance System (MSISS), maintained by the Massachusetts Department of Public Health (MDPH).[6]

EPINet-SIS was established in

Table 1. Comparison of annual sharps injury rates for EPINet and MSISS

Annual sharps injury data from:	EPINet, 2007		MSISS, 2008	
Average sharps injury rate	27.97 per 100 occupied beds		17.2 per 100 licensed beds*	
Rates by hospital status:	Teaching	Non-teaching	Size: <100	>300
	33.49	16.16	11.4	25.2
No. of hospitals contributing data	29		99	
Total no. of injuries	951		3,126	

*In Massachusetts number of licensed beds and occupancy rates are highly correlated; although EPINet and MSISS use different denominators for calculating injury rates, they are comparable.

1993; most of the hospitals contributing data are part of a statewide network in South Carolina coordinated by Palmetto Hospital Trust Services. As shown in the table above, in 2007 a total of 29 hospitals (1 each from Nebraska, Pennsylvania, and Virginia, the rest from South Carolina) contributed data, with an aggregate of 951 sharps injuries (SIs) reported and an average injury rate of 28 SIs per 100 occupied beds.[7]

In Massachusetts, all hospitals are required to report sharps injury data to the MDPH; this was mandated by a state law in 2001, and collection of data began in 2002. For 2008, 99 hospitals contributed data, with a total of 3,126 SIs reported and an average SI rate of 17.2 per 100 licensed beds.[8] For both EPINet-SIS and MSISS, rates varied according to teaching status and hospital size, with substantially higher rates typically seen for teaching hospitals and hospitals over 300 beds (with the two being closely correlated—i.e., teaching hospitals tend to be large hospitals).

Nurses (RNs/LPNs) sustained the largest share of injuries in both EPINet and MSISS data—34% and 38%, respectively. Sharps injuries occur most often in the surgical setting (EPINet: 36%; MSISS: 32%) and patient rooms (EPINet: 23%; MSISS: 22%). It is important to note that a large proportion of injuries are sustained by workers other than the original user of the device. In EPINet-SIS data from 2007, 30% of sharps injuries were sustained by such workers, including clinicians, housekeepers, laundry and waste management personnel, and even administrative staff.

Clearly, we still have much room for improvement. The data show that while the U.S. has been successful in significantly reducing sharps injury risk to healthcare workers in most hospital settings, challenges remain, particularly in surgical and non-hospital settings. Healthcare is increasingly being provided outside of hospitals, such as practitioners' offices and clinics, patient homes, rehabilitation centers, and long-term care facilities. This shift is expected to continue well into the future[9]; yet these are the very settings in which enforcement of the BPS has been weakest and implementation of safety-engineered devices, according to market data, has been lowest.

We believe that our healthcare workers represent a critical national resource, and that we should do everything we can to protect them from harm while they care for others. We also believe that healthcare worker safety is a crucial component of patient safety, and of the overall safety and quality of the healthcare environment.

Recommendations

We have identified the following areas as key to making further progress in reducing the risk of sharps injuries to healthcare workers.

I. Improving Sharps Safety in Surgical Settings

A study published in 2010 showed that despite the revised BPS and advances in sharps safety technology, sharps injuries in surgical settings from 2001 to 2006 increased by 6.5%, while injuries in all other hospital settings decreased by 31.6%.[4] The study also indicated that the majority of injuries in the surgical setting are caused by suture needles and scalpel blades, with a significant proportion sustained during instrument passing and after use. Injuries to nurses and surgical technicians were most often caused by devices originally used by others (i.e., surgeons). Blunt suture needles, which can prevent injuries during suturing of internal tissue and fascia—injuries which account for about a

Sharps safety should not be an individual choice, since many injuries are sustained by workers other than the original users.

third of suture needle injuries overall—are currently vastly underutilized by U.S. surgeons, despite recommendations from the American College of Surgeons (ACS), the Association of periOperative Registered Nurses (AORN), and other surgical professional associations.

We recommend that:

1. *Institutions adopt a site-specific sharps safety policy for the OR. Such a policy should mandate the availability, training, and use of specific sharps safety devices and implementation of risk mitigation strategies outlined by the ACS and AORN. When available and reasonable, users should be able to choose between several comparable and effective safety devices or personal protective equipment (scalpels, gloves, goggles, etc.) to suit their individual work practices, body sizes, and comfort. Sharps safety should not be an individual choice, since many injuries are sustained by workers other than the original users (and choosers) of devices.*
2. *Surgeons, OR nurses and other surgical personnel work cooperatively to develop sharps safety standards and practices that are consistently implemented and followed in all surgical environments.*
3. *Professional groups and manufacturers join forces to encourage the use of blunt suture needles for appropriate applications.*
4. *OSHA place greater emphasis on BPS compliance in surgical settings by evaluating overall adoption of safety devices to eliminate or minimize exposure risks. For example, compliance officers should determine if a facility encourages the use of blunt suture needles when clinically appropriate.*

II. Understanding and Reducing Exposure Risks in Non-Hospital Settings

Healthcare workers in non-hospital settings account for about 65% of the U.S. healthcare workforce.[9] While safety-engineered devices are in widespread use in most hospitals and clinical laboratories, market data show that their use in non-hospital settings (home healthcare, long-term care, practitioners' offices and clinics, etc.) has been much less consistent. "Non-hospital" is a broad term that encompasses a wide range of care settings; this makes generalizations about risk somewhat tenuous. Valid and reliable sharps injury data from non-hospital settings is limited; a critical need exists for data that specifically target these different environments, each of which has a unique risk profile. Studies by two research groups, one examining exposure risks to home healthcare workers and the other risks to paramedics, have begun to fill in the overall picture, but more such setting-specific studies are needed.[10-14]

We recommend that:

5. *Health and Human Services agencies such as CDC/NIOSH and other government and non-governmental agencies and professional organizations support epidemiological research that evaluates risks to workers in a wide range of non-hospital settings.*
6. *OSHA promote regional emphasis programs that focus on enforcement of the BPS in non-hospital settings; further, that other relevant groups, such as accrediting and licensing bodies and healthcare and workers' compensation insurers enhance compliance incentives for non-hospital employers.*
7. *Professional organizations and medical product distributors for non-hospital care settings collaborate to make sharps safety a priority and ensure that appropriate devices and educational and training materials are available which are targeted for workers in these settings.*

III. Involving Frontline Healthcare Workers in the Selection of Safety Devices

Anecdotal evidence suggests that frontline healthcare workers are not consistently involved in the selection of safety devices. However, the BPS requires that workers—those who will actually be using the devices—be included in annual device evaluations.[15]

Also, hospitals may be inclined to base decisions about safety devices on cost, but cost alone cannot be the main criteria for selection. An OSHA Letter of Interpretation, issued in 2002, explicitly states that "selecting a safer device based solely on the lowest

We need to encourage continued development of non-needle-based solutions for the delivery of medications.

cost is not appropriate. Selection must be based on employee feedback and device effectiveness."[16]

Employers should make input from workers a priority in selection criteria, and need to weigh the relative efficacy of different safety devices for particular applications. Which devices do workers prefer and why? Have improvements been made in device technology? At a time when the pressure to reduce healthcare costs is intense, it is important to keep these user-oriented questions at the forefront of device selection.

We recommend that:

8. *Organizations representing healthcare workers educate members about the legal obligation of employers to include frontline workers in the selection of safety devices. Members need to be encouraged to participate in this process.*
9. *Hospital and healthcare employers consistently involve frontline healthcare workers in the selection and evaluation of safety devices, as is their obligation under the Bloodborne Pathogens Standard. Employers also need to enlist frontline workers in regular and systematic assessment of the devices currently in use in their institution, to ensure such devices are appropriate and, in OSHA's words, "eliminate or minimize employee exposure" to the "lowest feasible extent."*
10. *NIOSH or another government agency consider funding research to assess whether and to what extent the requirement to include healthcare workers in the device selection process is being met in facilities across the country, and the ways in which this is being done. This research could provide the basis for developing a model program for frontline worker participation in device selection and evaluation.*

IV. Addressing Gaps in Safety Devices: The Need for Continued Innovation

Safety device technology has continued to evolve over the past decade; however, unmet needs remain for many clinical procedures and these gaps need to be addressed.[17]

Care settings and device categories for which safety is lacking or choices are limited include nuclear medicine; dentistry and home care; longer-length needles used for bone marrow, bariatric, biopsy, spinal, epidural, and acupuncture procedures; needle extenders for cervical injections; ophthalmic blades; and arterial-line catheters.

Greater innovation and more variety are needed, especially for surgical safety devices given the high risk of exposure and relatively low adoption of safety devices in this setting. We also need to encourage continued development of non-needle-based solutions for the delivery of medications, which eliminate sharps injury risk altogether.

We recommend that:

11. *Professional organizations partner with device manufacturers to assess and prioritize device needs for specific clinical applications, to monitor progress in closing existing gaps, and to identify future needs.*
12. *Manufacturers partner with surgeons and surgeon groups to develop suture and scalpel safety designs that both reduce risk and are comfortable and intuitive for surgeons to use. Also, companies that provide prepackaged surgical and procedure kits must ensure that devices included in these kits comply with the BPS.*

V. Enhancing Education and Training

EPINet data from the past two decades have consistently shown that sharps injury rates in teaching hospitals are significantly higher than those for non-teaching hospitals.[18]

Although the reasons for this are multifactorial, it does suggest the need to reevaluate and expand training related to bloodborne pathogens and sharps injury prevention in medical and nursing schools throughout the U.S.

Additionally, data from both EPINet and MSISS show that safety devices are a significant source of sharps injuries (although at a much lower rate compared to non-safety devices). Again, the reasons for this can vary, but include not activating the safety mechanism because of insufficient training on how to use the devices. Making training accessible to all can be

challenging, particularly when trying to reach shift workers or those in non-hospital settings. Innovative educational tools using a variety of media and settings, including hands-on device "labs" where users who feel the need for further practice beyond initial training can do so on models, are needed to address the wide range of settings in which healthcare is practiced and sharp devices are used.

We recommend that:

13. *CDC/NIOSH, OSHA, and/or other appropriate government agencies partner with medical, nursing, and allied health schools and accrediting bodies to develop standardized curricula on bloodborne pathogen exposure prevention and the selection and use of safety-engineered devices. Such training is an essential part of the education of all healthcare professionals (both at the beginning of and throughout their careers).*
14. *Healthcare employers provide instruction on an annual basis for all potentially exposed clinicians and other workers (including service workers and purchasing agents) on the appropriate use and disposal of safety devices that are available in their facility, as mandated by OSHA. Such training provides a forum for addressing questions and issues that arise as new devices are introduced.*
15. *Employers, professional educators, manufacturers and employee representatives collaborate to develop training strategies that can be widely applied when new devices are introduced, so that frontline healthcare workers know how to properly use and dispose of them.*

Training provides a forum for addressing questions and issues that arise as new devices are introduced.

As a result of the leadership of our partners in the federal government and a variety of stakeholders, the U.S. has made tremendous progress in protecting healthcare workers from exposure to bloodborne pathogens. Other countries look to the BPS and NSPA as models for their efforts to address this critical component of occupational safety in healthcare facilities. While we celebrate the progress we have made, we must acknowledge the gaps that exist and redouble our efforts to ensure that all healthcare workers, regardless of the setting in which they practice or the procedures they perform, are offered the same level of protection from sharps injuries and exposures to bloodborne pathogens. ▲

REFERENCES

1. Occupational Safety and Health Administration. Occupational exposure to bloodborne pathogens; needle-sticks and other sharps injuries; final rule (29 CFR Part 1910.1030). Federal Register. 2001;66(12):5318-25.
2. Needlestick Safety and Prevention Act of 2000, Pub. L. No. 106-430, 114 Stat. 1901 (Nov. 6, 2000).
3. Jagger J, Perry J, Gomaa A, Phillips EK. The impact of U.S. policies to protect healthcare workers from bloodborne pathogens: the critical role of safety-engineered devices. Journal of Infection and Public Health. 2008;1:62-71.
4. Jagger J, Berguer R, Phillips EK, Parker G, Gomaa AE. Increase in sharps injuries in surgical settings versus nonsurgical settings after passage of national needlestick legislation. Journal of the American College of Surgeons. 2010 Apr;210(4):496-502.
5. Jagger J, Cohen M, Blackwell B. EPINet: A tool for surveillance and prevention of blood exposures in health care settings. In: Charney W, editor. Essentials of Modern Hospital Safety. Boca Raton, FL: CRC Press Inc; 1995. p. 223-39.
6. Massachusetts Department of Public Health Occupational Health Program. Sharps Injuries among Employees of Acute Care Hospitals in Massachusetts, 2002-2007. Infection Control and Hospital Epidemiology 2011;32(6):538-44.
7. Perry J, Parker G, Jagger J. EPINet report: 2007 percutaneous injury rates. Published on-line August 2009; availabe at: http://healthsystem.virginia.edu/internet/epinet/EPINet-2007-rates.pdf. Accessed June 23, 2011.
8. Massachusetts Department of Public Health Occupational Health Program. Sharps injuries among hospital workers in Massachusetts, 2008: Findings from the Massachusetts Sharps Injury Surveillance System. Published on-line March 2010; available at: http://www.mass.gov/Eeohhs2/docs/dph/occupational_health/injuries_hospital_2008.pdf.
9. Bureau of Labor Statistics, U.S. Department of Labor. Career guide to industries (2008—2009 edition): health care. Table 3: employment in health care by industry segment (2006 and projected change, 2006—2016). Available at: http://www.bls.gov/oco/cg/cgs035.htm. Accessed October 2, 2008.
10. Quinn MM, Markkanen PK, Galligan CJ et al. Sharps injuries and other blood and body fluid exposures among home health care nurses and aides. American Journal of Public Health. 2009; 99 Suppl 3:S710-17.
11. Chalupka SM, Markkanen P, Galligan C, Quinn M. Sharps injuries and bloodborne pathogen exposures in home health care. AAOHN Journal. 2008; 56(1):15-29.
12. Markkanen P, Quinn M, Galligan C, Chalupka S, Davis L, Laramie A. There's no place like home: a qualitative study of the working conditions of home health care providers. Journal of Occupational and Environmental Medicine. 2007;49(3):327-37.
13. Boal WL, Leiss JK, Ratcliffe JM, Sousa S, Lyden JT, Li J, Jagger J. The national study to prevent blood exposure in paramedics: rates of exposure to blood. International Archives of Occupational and Environmental Health. 2010; 83:191-9.
14. Mathews R, Leiss JK, Lyden JT, Sousa S, Rat-

cliffe JM, Jagger J. Provision and use of personal protective equipment and safety devices in the National Study to Prevent Blood Exposure in Paramedics. American Journal of Infection Control. 2008;36:743-9.

15.OSHA provides the following detailed explanation of the requirement pertaining to inclusion of frontline healthcare workers in the device selection process in its Compliance Directive for the Bloodborne Pathogens Standard:

> Paragraph (c)(1)(v) requires the employer to solicit input from non-managerial employees responsible for direct patient care in the identification, selection and evaluation of effective engineering and work practice controls and document the solicitation in the Exposure Control Plan. The employer must solicit employee input in a manner appropriate to the circumstances in the workplace. Methods for soliciting employee input may include joint labor-management safety committees; involvement in informal problem-solving groups; participation in safety meetings and audits, employee surveys, worksite inspections, or exposure incident investigations; using a suggestion box or other effective methods for obtaining written employee comments; and participation in the evaluation of devices through pilot testing. The opportunities for employee input shall be effectively communicated to employees. Input from employees covered by a collective bargaining agreement may also be requested through their bargaining agent. Employers are not required to request input from each and every exposed employee; however, the employees selected must represent the range of exposure situations encountered in the workplace (e.g., emergency department, pediatrics, nuclear medicine). The employer must document the process by which the input was requested and identify the employees or the positions of those employees who were involved. (Enforcement Procedures for the Occupational Exposure to Bloodborne Pathogens - directive number CPL 02-02-069; November 27, 2001)

16. Occupational Safety and Health Administration. Standard Interpretations: Safer medical devices must be selected based on employee feedback and device effectiveness, not Group Purchasing Organizations. [1910.1030 - 11/21/2002] Available at: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIO NS&p_id=24385.

17. Hogan A. Gaps and successes of safety device market conversion. Materials Management in Health Care. 2005;14:33-4.

18. Jagger J, Perry J, eds. Preventing Occupational Exposure to Bloodborne Pathogens: Articles from Advances in Exposure Prevention, 1994-2003. Charlottesville, VA: International Healthcare Worker Safety Center, University of Virginia Health System, 2004. See pp. 87, 92, 94.

Appendix: Contributors

The consensus statement was developed by the staff of the International Healthcare Worker Safety Center at the University of Virginia, in conjunction with the Steering Committee for the conference "10th Anniversary of the Needlestick Safety and Prevention Act: Mapping Progress, Charting a Future Path," held in Charlottesville, Virginia, in November 2010. Steering committee members provided valuable guidance and feedback in the development of the statement. We particularly acknowledge the contributions of conference co-chair Elise Handelman.

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Choosing wisely: Resources for selecting sharps safety devices

An essential part of a sharps safety program is selecting appropriate devices, such as safety needles. While no one device, feature, or mechanism of action addresses all clinical needs, each device must be evaluated carefully. Also, proper selection requires involvement of front-line workers who will use the devices. All individuals participating in selection and use of safety devices need to understand the choices. Fortunately, many resources are available, including those listed below.

American Nurses Association: Needlestick Injury Prevention

www.nursingworld.org/MainMenuCategories/OccupationalandEnvironmental/occupationalhealth/SafeNeedles.aspx

This website section features a needlestick injury prevention guide, background information, a toolkit for nurses and employers, and links to pertinent articles. The nurses' toolkit includes a checklist for preventing needlestick injuries and seven responses to needlestick injuries.

Centers for Disease Control and Prevention (CDC): Bloodborne Infectious Diseases: HIV/AIDS, Hepatitis B, Hepatitis C

www.cdc.gov/niosh/topics/bbp/

This page provides emergency needlestick information for workers and medical providers and comprehensive resources on bloodborne infectious diseases. It also gives access to publications on preventing exposure to bloodborne pathogens among paramedics, use of blunt-tip suture needles to decrease percutaneous injuries to surgical personnel, information to help employers comply with the bloodborne pathogens standards, and a workbook for designing, implementing, and evaluating a sharps injury prevention program.

CDC: Engineering Controls and Personal Protective Equipment

www.cdc.gov/niosh/topics/bbp/controls.html

Here you'll find a wealth of information on safer needle devices, a needlestick-prevention device selection guide, tools for evaluating medical devices, and links to resources on other engineering controls, latex gloves, and personal protective equipment.

International Healthcare Worker Safety Center: Safety Device List

www.healthsystem.virginia.edu/pub/epinet/new/safetydevice.html

This page lists safety devices by device category and manufacturer, provides device-evaluation tools and forms, and links to a bibliography of recent articles on the efficacy of safety-engineered devices. You can access a checklist for sharps injury prevention at www.healthsystem.virginia.edu/pub/epinet/new/chcklst2.pdf.

Occupational Safety & Health Administration: Needlestick/Sharps Injuries

www.osha.gov/SLTC/etools/hospital/hazards/sharps/sharps.html

This website provides a summary of needlestick and sharps injuries, including how to properly handle needles and sharps, plus a section on safer needle devices featuring examples of safety device designs.

Premier Safety Institute: Resources and Tools

https://www.premierinc.com/quality-safety/tools-services/safety/topics/needlestick/resources.jsp#Evaluating_and_selecting_devices

This webpage discusses setting up or revising a sharps injury prevention program, and evaluating and selecting safer devices. It includes education and training resources, a tool for creating an inventory of sharps, and instructions on making a display board of sharps devices to keep staff current on availability and use of safer products. You can download a copy of the Institute's needlestick prevention educational brochure at https://www.premierinc.com/quality-safety/tools-services/safety/topics/needlestick/non-acute-care.jsp.

Training for Development of Innovative Control Technologies Project (TDICT)

www.TDICT.org

The TDICT Project is a collaborative effort of "healthcare workers, product designers, and industrial hygienists dedicated to preventing exposure to blood through better design and evaluation of medical devices and equipment." The website includes a section on safety feature evaluation forms (www.tdict.org/evaluation2.html) for products ranging from I.V. access devices to sharps containers for home health care.

Safety device checklist

According to the National Institute for Occupational Safety and Health alert, "Preventing Needlestick Injuries in Health Care Settings," safety devices should have the following desirable characteristics:

- ☐ The device is needleless.
- ☐ The safety feature is an integral part of the device.
- ☐ The user can easily tell whether the safety feature is activated.
- ☐ The safety feature cannot be deactivated and remains protective through disposal.
- ☐ The device is easy to use and practical.
- ☐ The device performs reliably.
- ☐ The device is safe and effective for patient care.

Safety feature evaluation form: I.V. connectors

Date: _____ Department: _____ Occupation: _____

Product: _____ Number of times used: _____

Please circle the most appropriate answer for each question. Not applicable (N/A) may be used if the question does not apply to this particular product.

	Agree			Disagree		
1. Use of this connector eliminates the need for exposed needles in connections	1	2	3	4	5	N/A
2. The safety feature **does not** interfere with normal use of this product	1	2	3	4	5	N/A
3. Use of this product requires you to use the safety feature	1	2	3	4	5	N/A
4. This product **does not** require more time to use than a non-safety device	1	2	3	4	5	N/A
5. The safety feature works well with a wide variety of hand sizes	1	2	3	4	5	N/A
6. The safety feature allows you to collect blood directly into a vacuum tube, eliminating the need for needles	1	2	3	4	5	N/A
7. The connector can be secured (locked) to Y-sites, hep-locks, and central lines	1	2	3	4	5	N/A
8. A clear and unmistakable change (either audible or visible) occurs when the safety feature is activated	1	2	3	4	5	N/A
9. The safety feature operates reliably	1	2	3	4	5	N/A
10. The exposed sharp is blunted or covered after use and prior to disposal	1	2	3	4	5	N/A
11. The product **does not** necessitate extensive training to be operated correctly	1	2	3	4	5	N/A

Of the above questions, which three are the most important to **your** safety when using this product?

_____

_____

Are there other questions which you feel should be asked regarding the safety/utility of this product?

_____

_____

For more evaluation forms, go to www.TDICT.org.