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HCW union launches state-by-state campaign for safe needle legislation

Union president says federal standard would be 'the ultimate solution'

Vowing to do "whatever it takes" to force hospitals to switch to safer needle devices, the president of the nation's largest health care worker labor union has launched a grass-roots campaign that will sweep the nation state by state, attempting to duplicate the success of legislation requiring California health care facilities to evaluate and purchase new needle technology.

The Washington, DC-based Service Employees International Union (SEIU), which represents about 650,000 HCWs nationwide, announced plans to introduce legislation based on the successful California model in 18 states and the District of Columbia this year. Legislation already has been introduced in Maryland, Florida, New Jersey, Massachusetts, Montana, Indiana, Illinois, and Washington state. Other states targeted are Connecticut, Iowa, Georgia, Maine, Missouri, New York, Oregon, Pennsylvania, Texas, and Wisconsin.

The union also will continue to lobby Congress for a national law and ask the U.S. Occupational Safety and Health Administration (OSHA) for revisions to the bloodborne pathogens standard that would require safer devices as an engineering control to prevent needlesticks, "but we can't wait," says **Andrew Stern**, SEIU president. "This is an issue of immense importance to everyone who works in a health care facility today."

Speaking to the media recently via a national teleconference, Stern acknowledged that a federal standard is "the ultimate solution." He called upon other members of the health care community to join in campaigning for a national standard or federal legislation.

"Every year, more than a million health care workers are accidentally stuck by a needle," he says. "It used to be a red badge of courage for many, but now it's often a death sentence. State by state or nationally, we'll do whatever it takes to stop this tragedy."

Stern says 1,000 HCWs contract hepatitis B or C or HIV from needlesticks every year, and 100 workers die each year — "the equivalent of a plane load of health care workers" — from occupational transmission of those diseases.

"The tragedy and scandal of all of this is that there is now technology that can prevent at least 75% of all of these injuries, and if hospitals would just stop buying conventional and hazardous needles and start using safer needles, this situation could change immediately and dramatically," he adds.

Safer needles have been available since 1991, Stern notes, but the federal government does not require their use. He defines safer needles as those equipped with a protective shield over the needle or a mechanism that automatically retracts the needle into the barrel after use.

Hospital officials often cite as prohibitive the increased cost of safer devices over conventional versions, but Stern refers to an internal report by the California OSHA (CalOSHA) Standards Board prepared as part of the cost analysis for rulemaking, which found that safer needles cost an average of 23 cents to 24 cents more than their conventional counterparts. On the other hand, the cost to a hospital of each needlestick is estimated to be between $2,234 and $3,832, according to CalOSHA.

Standards board staff estimate that the new law will cost California health care facilities about $104 million a year for safer needle technology and $81 million a year for increased record-keeping costs related to sharps injury logs. However, CalOSHA also estimates the savings on screening and treatment for sharps injuries at $291 million, for a net savings of $106 million per year.

If all states were required to use safer devices, those savings could translate to billions of dollars annually, says Stern, but "more importantly, it's about saving health care workers' lives. Hospitals would rather pay workers' comp payments than pay a little more for life-saving devices. These [safer] needles aren't getting to health care workers. We have continued to appeal for too long to OSHA and the FDA [Food and Drug Administration] to ban unsafe needles."

A ban is unlikely, but federal agencies have pledged to take other action this year on needlestick prevention issues. **(See *Hospital Employee Health*, March 1998, pp. 25-28.)** The SEIU hopes OSHA's recent request for information on needlesticks will result in a stronger bloodborne pathogens standard, but agency officials remain noncommittal about that possibility.

OSHA remains noncommittal

While the California law ultimately may lead to federal action, union officials aren't taking a wait-and-see approach. Legislation already introduced in Maryland is sponsored by every representative with a medical background, Stern says. In each state, the grassroots campaign is led by nurses with firsthand knowledge of the dangers of needlesticks, he adds.

Lorraine Thiebaud, RN, a nurse for more than 25 years, most of them at San Francisco General Hospital (SFGH), actively campaigned for the California legislation. She became an activist for safer needles in 1991 after a medical student at SFGH acquired HIV from a needlestick with a device for which a safer version was available but was not in use because the hospital considered it too expensive.

OSHA draft ergonomics rule available on Internet

Formal proposal to be released in September

The U.S. Occupational Safety and Health Administration (OSHA) has released a preliminary draft of its highly anticipated ergonomics standard. The draft is available only on the World Wide Web at www.osha-slc.gov/SLTC/ergonomics/ergoreg.html, or go to www.osha.gov and follow the ergonomics links.

Take advantage of this unusual opportunity to see a standard in progress. Public comments will not be taken until a formal proposal is published in September. A final standard is expected to be issued in 2000.

The draft standard will be reviewed for its impact on small business. Under the Small Business Regulatory Enforcement and Fairness Act (SBREFA), proposed regulations must first be reviewed for their economic impact on small businesses before being published in the *Federal Register* for public review and comment.

OSHA crafted the proposal — written in plain language in a question-and-answer format — around six basic elements: management leadership and employee participation; hazard identification and information; job hazard analysis and control; training; medical management; and program evaluation. ■

"The law in California will drastically reduce the number of needlestick injuries, so California health care workers can go to work without fearing coming home with a deadly disease," she says. "This legislation needs to be passed in every state. Safer needles will not be in workers' hands if it is left up to hospital administrators and needle manufacturers."

OSHA cites hospital's exposure control plan

While the state-by-state approach may or may not pressure the federal government to establish a national law, some have charged that OSHA could enforce the present version of the bloodborne pathogens standard to require hospitals to evaluate and implement safer needle devices right now. *HEH* has learned that one hospital recently has been cited under the standard for not addressing the use of safer needle devices in its exposure control plan, and that revisions to OSHA's compliance directive for standard enforcement could lead to similar citations for other hospitals.

Presbyterian St. Luke's Hospital in Denver was cited for a "serious" violation because its bloodborne pathogens exposure control plan "did not address the selection, evaluation, and implementation of engineering controls to eliminate or minimize employee exposure. Such controls consist of, but are not limited to, needleless IV systems, blunt suture needles, and self-sheathing needles," the citation states.

Steve Yellstrom, the OSHA compliance officer who inspected and cited the hospital, says a $1,625 fine was levied for an exposure control plan that failed to include a schedule and/or methods of implementation for complying with the standard's engineering controls requirement to prevent bloodborne pathogens exposures. Engineering controls include safer needle technology, Yellstrom says.

Interestingly, although the employee complaints that precipitated the inspection were related to bloodborne pathogens, OSHA found those complaints unsubstantiated. The citation was issued for other problems discovered during the visit.

"When investigating allegations, we have to look at the entire program," Yellstrom explains. "Whenever we look at a facility that involves [the] bloodborne [pathogens standard], we also look at their written program and make sure it contains all the elements required by the standard."

In talking with workers, it appeared that the hospital had instituted some safer devices, but there was no list, no written plan for selecting or evaluating devices, and no systematic method documented for implementing them. Therefore, the hospital had no proof of compliance with the exposure control plan provisions of the standard. **(See editor's note at end of article.)**

"Unless you have a system, there's no way you can really grasp what's out there, what's working, and why you selected one device over another," Yellstrom says.

He suggests that when employee health nurses meet periodically with infection control and safety officers, one person should be assigned to maintain a binder of information on devices currently in use compared with new devices on the market.

"They should have an organized plan to test newer devices and see if they're better. Combined with that, if they have an exposure incident such as a needlestick, they need to really examine the cause and see if it could have been mitigated by a better device," he adds. "If it's not systematic and it's not documented, we can't tell how effective their program is."

In fact, St. Luke's exposure control plan included no mention at all of safer needle devices as an engineering control, Yellstrom states. The hospital has since abated the citation, which was reclassified to "other than serious" — meaning a violation is not likely to result in serious injury or illness — following an informal conference.

St. Luke's officials refused to respond to repeated requests for information about how they abated the citation and improved their exposure control plan.

More strict enforcement ahead?

The citation has drawn attention for two reasons. One is that it apparently is the first one known to be related specifically to safer needle devices. Also, it could signal stricter enforcement of the engineering controls provision of the standard now that preventing needlestick injuries among HCWs has become an OSHA priority.

The first reason is difficult to verify, however. **Wanda Bissell**, an industrial hygienist with OSHA's office of health compliance assistance, says the agency's database shows that the engineering and work practice controls provision of the standard has been cited 110 times since 1992, but recorded data are not specific enough to indicate whether those citations involved safer needle devices.

OSHA's recent request for information (RFI) regarding needlesticks signals an important first step in addressing the problem; still, observers are questioning the need for and eventual use of the data acquired. **(See *HEH,* November 1998, pp. 129-132.)** Bissell says the RFI could result in a revised final rule, and that information obtained might also be incorporated into the standard's compliance directive she is charged with updating.

"I anticipate using part of the RFI in a new directive specifically related to the use of safer devices," Bissell says. "We're planning to make it more specific; the marketplace is booming with new needle devices we had never dreamed of in 1992 when [the current compliance directive] was written. There wasn't a market then for the stuff. OSHA standards are often the mother of invention, and that's what has happened."

Bissell says the "modernized" directive, pending approval, will be modeled after materials used in California, which requires safer device use.

"Hopefully, the RFI will show us what devices we can support, and [we might] list some actual devices we would like employers to use," she adds.

(Editor's note: The OSHA Web site includes a current sample of the bloodborne pathogens exposure control plan. Go to: www.osha-slc.gov:80/OshDoc/Interp_data/I19920325.html.*)* ■

Safer needle project urges worker participation

TDICT focuses on testing new technology

Frontline health care workers must be involved in purchasing decisions relating to safer needle devices, says a California researcher whose work is known nationwide.

Group purchasing arrangements have caused individual hospitals to lose control over which devices are chosen, and "decisions are being made by those who know nothing about these devices other than their cost," says **June Fisher**, MD, director of the San Francisco-based Training for Development of Innovative Control Technology (TDICT) project, an occupational health physician, associate clinical professor of medicine at the University of California/San Francisco (UCSF), and lecturer in engineering (product design) at Stanford University in Palo Alto.

Launched in 1990, the TDICT project brings HCWs together with product design engineers and industrial hygienists dedicated to preventing exposure to bloodborne pathogens through better design and evaluation of medical devices and equipment. To further that goal, Fisher has developed the first written criteria for evaluating and selecting more than 20 types of medical devices. **(See the four newly updated criteria sheets for safer needle devices, inserted in this issue.)**

"Our purpose is to advance the use of safer medical devices, and TDICT is unique in the sense that it brings together product design engineers with health care workers and industrial hygienists. That was revolutionary in itself — to bring people together in a systematic way. In their training, product designers and industrial hygienists never really get to talk with health care workers," Fisher explains.

The criteria sheets were the result of a process involving HCW observation, focus groups, mentoring, and product testing. Some hospitals adapt the criteria sheets for their own use, but whether used as-is or customized, they provide a systematic tool for evaluating the design of safer devices with major emphasis on input from the frontline workers who will be using those devices, she says.

TDICT's criteria sheets have been incorporated in needlestick-prevention information developed by the American Hospital Association in Chicago and the Washington, DC-based Service Employees International Union. They also are available on the World Wide Web. **(See editor's note at end of article for more information on these materials.)**

HCWs enact scenarios for device testing

Scenarios are another TDICT-created evaluation tool for testing new devices. These simulations of real-life use enable HCWs to evaluate devices in settings that reflect the actual circumstances in which the devices tested would be used, without threatening workers' or patients' safety. Using criteria sheets, HCWs who would actually provide patient care with the products being tested form a group of "players" in a setting that closely approximates a real environment. Factors considered include room lighting and temperature, noise, crowding, patient state (such as whether the patient is an adult or child, sleeping, violent, or jumpy), and work conditions (such as whether an HCW's hands will be wet and slippery).

User-Based Performance Standards

The San Francisco-based Training for Development of Innovative Control Technology (TDICT) project has developed performance standards for the design, evaluation, and selection of all safer devices in conjunction with frontline health care workers and the Centers for Disease Control and Prevention. The following is a partial list; for the complete list, see the TDICT Web site at http://members.aol.com/tdictproj/performance.html.

User Safety

- Does use of the device require excessive retraining?
- Can most of the retraining be done in a lab or simulated setting?
- Do new users experience a steep learning curve?
- Does the user's level of expertise affect the learning curve (novice vs. expert user)?
- Does use of the device change the existing procedure significantly?
- Is the device intrinsically more simple, as opposed to more complex, than the device it will replace?
- Does the device require an action that is counter to prevailing procedures? (Is correct use of the device intuitive?)
- Does the device increase time needed for a given procedure?
- Is the product self-contained as opposed to an assembly of different parts?
- Does the product need to be disassembled/assembled prior to disposal?
- Does the device fit well in the user's hand as opposed to being cumbersome?
- Who uses the product?
- Where and how will failure occur?
- Can the product be easily misused, used differently, or co-opted for alternative use?
- What are the scenarios for common, uncommon, and inappropriate use?
- Is the safety feature on the device passively activated (effective without user interaction/interference)?
- Are the safety cues for the safety feature evident at all times? (Are clicks audible, visual markings noticeable, tactile sensations apparent through gloves?)

Administrative Satisfaction

- Does the product cost correlate closely with other similar devices on the market?
- Is cost prohibitive to widespread use of the product?
- Does the product cost appear to be correlated to production expense?
- Will device implementation require excessive retraining?
- Can most retraining be done in a lab setting?
- Does the user's expertise level affect the learning curve (novice vs. expert user)?
- Does use of the device change the existing procedure significantly?
- Is the proposed solution of equal or greater effectiveness?
- Where is the product used?
- What environmental factors must be considered in product evaluation?
- What is the product life-cycle?
- Are recycling or disposal directions clear on the package or product?
- Does the device or its packaging present any new inventory problems?
- Is the device FDA-approved? Is it Class I, II, or III?
- How does the device affect patient well-being (quality assurance)?
- Who uses the product?
- Where and how will failure occur?
- How might the product be misused, used differently, or co-opted for alternate use?
- What are the scenarios for common, uncommon, and inappropriate use?
- Does the device offer a distinct advantage to the institution using it?

Source: TDICT Project, San Francisco.

Information gleaned from scenarios enables potential product users to evaluate whether a device is appropriate and effective in the setting tested. For example, some safer devices utilize an audible click that signals users when the safety sheath has been activated. That click might not be heard in a noisy emergency room or other setting.

During a scenario, a "recorder" should be assigned to write down problems discovered, and a "facilitator" will direct the players in recreating use of the device. As data are gathered, groups will be able to assign a score to each device evaluated. **(See forms inserted in this issue.)**

A new guidance document in development by the National Institute for Occupational Safety and Health probably will include a number of scripted scenarios as examples for hospitals to use in their own device evaluations.

Also in conjunction with frontline HCWs, TDICT created a list of fundamental performance

standards to be met by all devices in all phases of use. **(See box, p. 41.)**

In addition to creating device evaluation tools, TDICT examines needlestick data to obtain epidemiological information for problem identification and promotion of better product design technology. A project currently is under way in the operating rooms of UCSF, where preliminary clinical observations and injury data review suggest that anesthesiology and transplant personnel are most in need of safer devices.

Fisher also is focusing on the needs of home health care workers, which she says are becoming increasingly complex.

"People are doing things that would have been done in intensive care units a few years ago, so complex equipment must be brought to the house where there is not a stable environment in many instances," she says. "The room may be cluttered, there may be animals or children underfoot, and home health care workers might come in and find that their equipment is not compatible with the equipment the patient was given upon discharge from the hospital. All of this is conducive to sharps injuries."

Analyses should include 'emotional factors'

While cost issues still are a concern in many hospitals' decisions to purchase safer needle devices, Fisher says cost analyses are inaccurate unless needlestick-related lost time, absenteeism, productivity, and "emotional factors" are included.

"How do you put a cost on emotional factors?" she asks. "People just talk about the conversions, and they say the numbers are low. Cost-benefit analyses eliminate the human factor. A stick that doesn't convert also has enormous impact on people's lives and abilities to function. It's basically a year of hell, and you're talking about hundreds of thousands of people who are concerned about this issue. It's scary to think that hospitals refuse to put in safer devices because having people convert is cheaper."

[Editor's note: For more information about the TDICT project, as well as additional product evaluation forms, log onto the World Wide Web and go to: http://members.aol.com/tdictproj/*. To obtain a copy of the American Hospital Association's information packet on preventing needlestick injuries, call (800) 242-2626. For the Service Employees International Union's "Guide to Preventing Needlestick Injuries," including a video, call (202) 898-3200.]* ■

GUEST COLUMN

Certification reflects professional mastery

OHN credential validates knowledge, expertise

By **Sharon D. Kemerer**, RN, MSN, COHN-S
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The eve of a new millennium offers an ideal opportunity to identify trends and directions in our professional careers.

The definition of the occupational health nurse's (OHN's) role has evolved over time with advances and changes in the health care delivery system and dynamic relationships with the client population of employees. Increasing independence and accountability for professional actions and judgements have been a hallmark of that evolutionary process.

As that autonomy has increased, so has the need for valid credentialing of OHNs to ensure high-quality practice. The impact of managed care is undeniable, with networks often demanding additional credentials to assure competence and command positions of authority.

Of course, as a minimum, OHNs should hold licensure as registered nurses (RNs) within their states of practice. Unlike licensure, which assures the public of safe practice at a beginning level and is required for basic practice, certification in occupational health nursing reflects specialty practice and knowledge at a mastery level. It provides an outward sign by an independent body that the professional is an authority in the specialty of occupational health nursing.

When asked about the effect certification has had on their careers, recently certified OHNs report many advantages to achieving COHN or COHN-S status, including:

- increased responsibility in their positions;
- pay increases and promotions;
- strong management support for continuing education;
- increased decision-making power;
- programs that are more cost-effective and compliant with regulations.

Becoming certified is a process. It includes achieving eligibility requirements, completing an application, performing a self-evaluation of skills and strengths, and following a program of study dictated by individual needs. The final step is successfully passing the national examination, but it is the process that benefits any professional who attempts certification.

The American Board for Occupational Health Nurses (ABOHN) is the sole certifying body for occupational health nurses in the United States. It was established in 1972 following the recommendations of a multidisciplinary committee to provide a certification program for occupational health nurses.

Two types of certification offered

ABOHN's program includes two basic certification types: the Certified Occupational Health Nurse (COHN) and the Certified Occupational Health Nurse Specialist (COHN-S). Once achieved, certification is maintained by demonstrating continuing education in the area of occupational health and by continued professional practice. More than 9,200 nurses have been certified by ABOHN since its founding, with more than 6,600 nurses holding active certification at the time of this publication.

Both the COHN and COHN-S certifications require that nurses work in occupational health for at least 2½ years, hold an active RN license, and have attended at least 75 contact hours of continuing education in the specialty area. In addition, the COHN-S certification requires a baccalaureate or higher degree as educational preparation.

Based on research into the roles fulfilled by OHNs, the COHN examination is focused heavily in direct care issues (approximately 45% of the test) and also reflects the OHN's role as coordinator and advisor. The COHN-S examination reflects the OHN's role in direct care, management, education, and consultation. Both examinations contain 200 questions.

Because of the strong role certified OHNs play in case management of employee health issues, ABOHN is developing a new case management (CM) certification. The first examination will be administered in fall 1999, and will be available only to nurses holding COHN or COHN-S status.

Certification examinations are administered twice a year, in the spring and fall, at more than 35 sites around the country. Application deadlines are Jan. 31 and July 31 of each year, and the application fee is $50. Once a candidate's application has been accepted, an examination fee of $275 is required.

Most candidates report preparing for their examination over a three-month period by using a variety of study methods. Review courses, offered by independent consultants and by many universities, offer overview material that can help direct individual study. Studying in a group, especially with other OHNs who work in varied settings, helps broaden work experience.

Certification is a voluntary mechanism for validating a professional's knowledge and expertise in a specialty. The occupational health nurse who is certified has made a commitment to the specialty and to continued professional growth and development by successfully completing eligibility and examination requirements. Certification is an excellent tool to take into the next millennium and beyond.

[Editor's note: For more information on certification as an occupational health nurse, contact: American Board for Occupational Health Nurses, 201 E. Ogden, Suite 114, Hinsdale, IL 60521-3652; telephone: (630) 789-5799; fax: (630) 789-8901.] ■

Daily testing ordered for TB isolation rooms

Monitoring devices fail to function properly

Officials in New York State are going low-tech to test airflow in hospital tuberculosis isolation rooms as a result of recent evaluations revealing high rates of faulty airflow that could have infected both health care workers and patients.

TB investigations conducted by the New York State Department of Health (NYSDOH) between 1992 and 1998 found that 38% of 140 respiratory isolation rooms evaluated had positive airflow relative to adjacent areas. In addition, rooms with electronic continuous airflow monitors failed to indicate actual airflow direction 50% of the time.

Those findings have prompted NYSDOH to require hospitals to test isolation rooms daily with smoke tubes that release visible smoke. Movement of the smoke within the room indicates airflow direction, and it's easy to see if

smoke is escaping into hallways under or around doors. All isolation rooms that are occupied by a potentially infectious TB case must be smoke-tested, regardless of the use of continuous electronic monitors, according to the directive issued to hospital administrators throughout the state.

If only one or two isolation rooms had airflow problems, they would have been considered an exception, but because problems "did not seem to be uncommon, that's why we wanted to alert hospitals that these relatively new monitoring systems may still need further exploration," **Margaret J. Oxtoby**, MD, director of the NYSDOH's Bureau of Tuberculosis Control, tells *Hospital Employee Health*.

Smoke-tube testing is not done routinely on a daily basis, Oxtoby says, but "given the expense and massive engineering efforts that have gone into developing these isolation rooms throughout the state, it's also important to do standard low-tech monitoring. We just shouldn't spend all our money, create these rooms, and feel like we're home free."

HCWs at low risk for exposure

Oxtoby points out that no HCWs were found to have been exposed to infectious TB due to faulty airflow.

"Overall, the big picture here is that health care workers appear to be at relatively low risk for exposure on the job," she says. "When we have health care worker cases reported, we go back very carefully to sort out where they might have had exposure, and most of them have been documented to have been infected when they started employment, often coming from other countries where TB is much more prevalent than it is in the United States. The [occupational] risk is really related to the undiagnosed person who's coughing and hasn't yet been suspected of having tuberculosis."

The risk to workers after a patient is suspected of having TB is minimal, she adds.

However, minimizing risk to HCWs and other patients depends upon well-functioning isolation rooms for suspected or confirmed infectious TB cases. The Centers for Disease Control and Prevention (CDC) issued guidelines in 1994 for preventing TB transmission in health care facilities. Until the U.S. Occupational Safety and Health Administration (OSHA) issues a final TB standard, the regulatory agency generally is enforcing the CDC's recommendations for engineering controls. The guidelines specify the need for monitoring and controlling airflow patterns within isolation rooms as well as airflow direction throughout a facility. Isolation rooms must be maintained at negative air pressure relative to adjacent areas.[1]

Negative pressure in a room can be measured by using smoke tubes to observe airflow within or between areas, the guidelines state. The CDC also requires periodic checks to ensure negative pressure and proper operation of continuous monitoring devices.

Officials with the National Institute for Occupational Safety and Health (NIOSH), the worker safety arm of the CDC, note that the NYSDOH directive for daily smoke-tube testing is consistent with CDC guidelines, which state: "If smoke tubes or other visual checks are used, TB isolation rooms and treatment rooms should be checked frequently for negative pressure. . . . TB isolation rooms should be checked daily for negative pressure while being used for TB isolation. . . . If pressure-sensing devices are used, negative pressure should be verified at least once a month by using smoke tubes or taking pressure measurements."

NIOSH never has been notified of problems relating to faulty operation of airflow monitoring devices, says spokesman **Fred Blosser**.

The agency has not been asked to become involved in NYSDOH's isolation room evaluations, but "we're always concerned when problems or questions about the safety of workers are raised," Blosser states. "We're looking at issues raised by the New York findings, but at this point we don't have any determination of what, if anything, we need to do."

Oxtoby says the NYSDOH directive exceeds CDC recommendations.

"Even if you have electronic devices, it would be best to also do daily smoke-tube testing," she advises. "We tend to trust that any high-tech device with a readout will tell us the truth, when in fact sometimes a very simple manual measure is more reliable because we know exactly what it means. Sometimes readout devices may only partially reflect what is happening and can be falsely reassuring if one depends on them entirely."

In evaluating the 140 isolation rooms, NYSDOH used a commercially available smoke-tube kit to generate visible smoke around doors and observed the smoke's movement at the bottom of doors and through spaces between doors and frames. Primary factors associated with outward (positive) pressure were identified as:

• ventilation systems not balanced, 54% of failed rooms;
• shared anterooms, 14% of failed rooms;
• turbulent airflow patterns, 11% of failed rooms;
• automated control system inaccuracies, 10% of failed rooms.

In 50% of isolation rooms equipped with continuous monitors, airflow direction revealed by the smoke test was the opposite of that indicated by the continuous monitoring device. The inability of monitors to qualitatively indicate actual airflow direction was associated with instrument limitations (74%) and device malfunction (26%). Those shortcomings were not associated with any particular manufacturer or technological design.

"The question of where the air flows is important," Oxtoby states. "The risk [to HCWs] is not as high as it was before a lot of attention was given to standards for operating isolation rooms. Workers who go into isolation rooms to work directly with patients are wearing masks, so their risk of breathing in TB from direct contact with the patient is still minimized as long as the airflow is adequate in the room. We're basically talking about a low risk and minimizing it even further."

Reference

1. Centers for Disease Control and Prevention. Guidelines for preventing the transmission of *Mycobacterium tuberculosis* in health care facilities, 1994. *MMWR* 1994; 43(No. RR-13): 1-132. ■

Obesity inflates health care costs of employees

Losing weight benefits workers, employers

Obesity is closely related to employee health care costs, according to a recent study showing that workers with a lower body mass index (BMI) incurred lower health care costs and fewer sick days.[1]

Using health risk appraisals and personnel data, the researchers compared the BMI of 3,066 employees with their health care needs and associated costs. Findings indicate that health care costs rise with worker BMI and suggest an "economically optimal" BMI at which health care costs are lowest.

BMI is calculated by dividing the employee's weight in kilograms by the square of his/her height in meters. Obesity has been defined as a BMI of 27.8 or higher for men and 27.3 or higher for women.

Health care costs were found to be lowest for workers with a BMI of 25 to 27, which is equivalent to a body weight of approximately 155 pounds for

Event promotes health of hospital employees

Kits available for employee fitness program

Employee health practitioners who want to incorporate wellness activities for workers at their hospitals can obtain event kits for the 11th annual National Employee Health and Fitness Day, set for May 19.

The Indianapolis-based National Association of Governors' Councils on Physical Fitness and Sports (NAGCPFS) sponsors the largest workplace health and fitness event in the country. This year's theme is "Make employee health your priority."

Benefits of health promotion at work include control over health care costs, fewer medical claims, lower absenteeism, a shared sense of community among co-workers, and higher productivity, according to the NAGCPFS. Participating in the event brings attention to new or existing health promotion programs and sends a message to employees that they are your hospital's most valuable assets.

Event planning kits include a site coordinator's guide, activity ideas, event materials, promotional information for internal newsletters and e-mail, national resources for free and low-cost health information, promotional poster, promotional logos and art, a coordinator's T-shirt, and a product catalog of wearable and usable items for prizes and incentives. Cost of the kit is $34.95. Additional planning kits, T-shirts, and an incentive prize sample package also are available.

Call the NAGCPFS at (317) 237-5630; fax: (317) 237-5631; or e-mail: Govcouncil@aol.com. To read more about the event, go to the NAGCPFS Web site at: http://fitnesslink.com/Govcouncil/index.html#nehfd. ■

a woman 5 feet 6 inches tall, or 174 pounds for a 5-foot 10-inch tall man.

Workers with an "at-risk" BMI had a higher rate of other health risks, such as insufficient exercise, lower life satisfaction, and diabetes. They used twice as many sick days (an average of 8.5) as those with a lower BMI (an average of 3.7) over three years. Sick day costs over three years per employee were $1,500 for those with higher BMIs, compared with $700 for workers with more optimal BMIs.

Women over 45 at increased risk

Three-year health care costs were $7,000 per employee for those with a BMI of 25 or higher, compared with $4,500 for those with a BMI below 25. The difference was especially pronounced for women over age 45 with higher BMI. Their health care costs increased for nearly all major disease classifications, including mental, circulatory, digestive, respiratory, and musculoskeletal disorders.

Those results suggest that workers over 45 with an elevated BMI, particularly women, are at increased risk of complications caused by obesity and represent the most promising focus of employee weight reduction programs, the researchers state.

They add that by helping workers achieve a healthier weight, organizations are likely to reduce overall medical and short-term disability costs. **(See box, p. 45.)** Losing weight also benefits workers, reducing risk of disease and personal health care costs.

Workers with a BMI greater than 30 constituted only 19% of the study population, but accounted for 26% of total health care claims and 29% of total health care costs.

Reference

1. Burton WN, Chen C, Schultz AB, et al. The economic costs associated with body mass index in a workplace. *J Occup Env Med* 1998; 40:786-792. ■

Literature Review

Watanakunakorn C, Wang C, Hazy J. **An observational study of hand washing and infection control practices by healthcare workers**. *Infect Control Hosp Epidemiol* 1998; 19:858-860.

Personnel hand washing has been linked with reduced risk of patient infection, but this study of how often health care workers actually wash their hands reveals disturbing findings.

A preclinical medical student unknown to HCWs at a Midwestern community teaching hospital conducted an observational study of hand washing and infection control practices in all patient care areas and on all three work shifts for six consecutive weeks. The student recorded whether HCWs washed their hands after patient care activities, HCW categories, type of activity, the time, and the patient care area. When relevant, the student also noted glove-wearing practices and compliance with isolation requirements.

Overall prevalence of hand washing was 30.2% (207 of 686 patient encounters). Hand washing prevalence among the three work shifts was similar. However, compliance varied significantly by job category, activity, and location. Residents washed their hands more often (59.2%) than attending physicians (37.4%) or nurses (36.2%). HCWs washed their hands more frequently after certain activities — such as examining patients (47.5%), bathing patients (83.3%), and emptying urine bags (44.1%) — than after others, such as wound care (23.5%) and suctioning (20.7%).

As intensity of care decreased, hand washing prevalence also decreased. Prevalence was highest in the surgical and cardiovascular intensive-care units (56.4%) compared with other areas such as medical and coronary ICUs (39.2%), intermediate units (30%), and general floors (22.8%).

Gloving rates varied for activities requiring glove use or for which glove use is desirable, such as drawing blood (77.6%), suctioning (65.5%),

COMING IN FUTURE MONTHS

- OSHA prepares to issue latex hazard warning
- Preliminary draft of ergonomics proposal released
- What to include in pre-employment physicals
- Managing employees exposed to pertussis
- Fax-back survey on hepatitis B vaccination programs

wound care (64.7%), emptying urine bags (45.6%), respiratory treatment (45.5%), and inserting peripheral intravenous lines (42.9%). No HCWs both wore gloves and washed their hands after each patient care activity.

The researchers state that compliance with isolation procedures was "excellent." Of 50 observations during the study period, when the only isolation procedure was contact isolation (requiring gloves, gown, and face mask), the compliance rate was 88%. Rates were similar among the three shifts.

Regarding hand washing, the authors note that "despite the well-known benefits of hand washing and the coaxing, cajoling, threatening, and pleading by experts in infection control, HCWs still neglect to wash their hands."

They also note that both the Centers for Disease Control and Prevention (CDC) and the Association for Professionals in Infection Control and Epidemiology (APIC) have published handwashing guidelines. In addition, the American Medical Association has instructed physicians to wash their hands with an antiseptic before and between patient encounters.

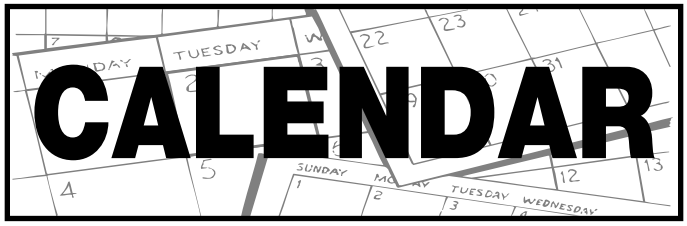
The researchers also cite a prospective study in ICUs at one hospital in which every HCW knew of the study and participated in a special education program that included a videotaped demonstration, written instructions, educational presentations, mailings, and refresher sessions. Observers monitored hand-washing compliance and posted results of hand cultures.

"A more aggressive program can hardly be imagined," the authors state. "Nonetheless, hand washing rates were as low as 30% and did not exceed 48% in any ICU during the study."

Universal precautions are CDC-recommended standards of care that include glove-use guidelines, yet this study shows that despite frequent educational programs, many HCWs do not comply. The authors also were disturbed to find that HCWs who wore gloves did not wash their hands afterward, despite APIC guidelines to the contrary.

"Gloves may have given HCWs a false sense of security, leading them to neglect hand washing," the authors state. "Such lapses are dangerous, because hands can be contaminated through leaks in gloves or when gloves are removed."

The researchers state that HCWs must be reminded constantly to wash their hands after each relevant patient encounter, as hand washing is the simplest practice shown conclusively to decrease nosocomial infections. ■



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WEB ALERT

Free mailing list targets employee health workers

By **Geoff Kelafant**, MD, MSPH, FACOEM
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The Medical Center Occupational Health Mailing List is a free, private, fully moderated mailing list with more than 140 subscribers. A mailing list is an automated e-mail system by which you can post messages to everyone who has subscribed to the list and automatically receive any messages posted to the list.

This particular list is private, requiring moderator approval before joining. Because it is fully moderated, moderator approval is required for every message before posting to members. These features prevent off-topic messages, unwanted commercials, and spam (junk e-mail) from being sent to list subscribers.

Recent discussions have included drug and alcohol testing, bloodborne pathogen programs, varicella immunization, and hepatitis C. Announcements regarding conferences, new Internet resources, and other information of interest to list members also are posted from time to time. List members include hospital employee health nurses, physicians, hospital administrators, industrial hygienists, and safety professionals. Searchable archives cover every message ever posted to the list.

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CE 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. ■