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Employee health smallpox role: Safeguard HCWs from vaccine risks

Hospitals begin preparing for vaccination of teams

Employee health professionals will not be administering the smallpox vaccine to health care workers, but they may be among the first to receive it under a recommendation approved by two federal advisory panels. About 500,000 health care workers — around 100 per hospital — may be vaccinated under the latest plan to prepare for bioterrorism. There have been no cases of smallpox worldwide since 1977, so even a single confirmed case of smallpox would be considered a bioterrorism event.

"We are not focusing on a target number of individuals to be immunized, but rather the objective is to identify . . . a sufficient number of health care workers in different categories to provide care in many, if not most, of the acute-care hospitals in this country," says **John Modlin**, MD, chair of the Advisory Committee on Immunization Practices (ACIP) and professor of pediatrics and medicine at Dartmouth Medical School in Lebanon, NH.

In the case of an actual outbreak, other health care personnel would be immunized, notes **Walter Orenstein**, MD, director of the Centers for Disease Control and Prevention's (CDC) National Immunization Program. "The goal [of the immunization plan] is a cadre of people who could care

Smallpox vaccinations imminent for hospitals

Know the consequences for your facility

The Atlanta-based Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP) recently approved a plan that calls for smallpox immunization of 510,000 health care workers. The plan suggests that all hospitals should designate a "smallpox care team" that should be immunized prior to any release of the virus.

(Continued on page 143)

for the first several patients in the first seven to 10 days on a 24-hour basis," he says.

ACIP and the Healthcare Infection Control Practices Advisory Committee (HICPAC), which also approved the recommendations, provide guidance to the CDC and the Department of Health and Human Services. The Bush administration is expected to make a decision on smallpox vaccination shortly. While many questions remain unanswered about how the vaccination process would proceed, the panels agreed on some basics:

- Vaccination with live vaccinia vaccine would be voluntary and would be offered to employees of the intensive care unit, the emergency department, infection control personnel, and selected other staff, including dermatologists, pediatricians, respiratory therapists, radiology technicians, engineers, and some employees from the security and housekeeping departments. Lab workers are not included in this recommended group because the viral load in clinical samples is expected to be low and to present a low risk.
- The vaccines would be administered by local and state health departments, but a team including infection control and employee health professionals would monitor and report adverse events daily.
- Employees would report to work after vaccination. However, their injection sites must be covered by gauze and a bandage. In daily inspections, infection control/employee health staff would ensure that the site is properly covered and the skin reaction doesn't pose any risk to patients. **(See related article, p. 135.)**
- Employees would undergo pre-screening before the vaccination day, and they would be asked about HIV risk factors, skin diseases, and the likelihood of pregnancy. Rapid HIV tests would be used for those who want to know their HIV status. **(See list of contraindications, p. 137.)**
- Vaccination would occur in phases, with small groups of health care workers at a facility. Those previously immunized as children should be the first ones vaccinated.
- At this time, ACIP and HICPAC do not recommend immunization of emergency medical technicians or other first responders. However, hospitals could choose to include some of their emergency transport staff in the vaccinated care team.

Exactly who should be vaccinated ultimately will be decided by individual hospitals, panel members said. Hospitals with negative-pressure rooms would designate larger teams, while hospitals without negative-pressure rooms might focus on emergency department capability, they said.

"This is a care team. This is not protection of everybody who could possibly be inadvertently exposed," says **Jane D. Siegel**, MD, professor of pediatrics at Southwestern Medical School of the University of Texas in Dallas and chair of the HICPAC bioterrorism working group.

While hospitals await direction from the Bush administration on when and whom to vaccinate, employee health professionals should begin gathering key players to discuss immunization issues, says **MaryAnn Gruden**, MSN, CRNP, NP-C, COHN-S/CM, employee health nurse practitioner at Western Pennsylvania Hospital in Pittsburgh and executive president of the Association of Occupational Health Professionals in Healthcare.

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THOMSON
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Vigilant monitoring will protect HCWs, patients

EHPs to join skin-care teams in daily checks

After health care workers receive the smallpox vaccine, employee health professionals will assist with the most important vaccination role: monitoring reactions and protecting patients and others from vaccinia.

A pustule forms from the live vaccinia (cowpox) virus in the vaccine, and until the scab separates from the skin about 21 days after vaccination, the injection site is infectious. Those who are vaccinated inadvertently can inoculate themselves in another part of the body, such as the eyes; or vaccinia can be transmitted to other people through contaminated hands or clothing.

The Healthcare Infection Control Practices Advisory Committee (HICPAC), an expert advisory panel, has developed a protocol for protecting and monitoring the injection site. It includes the following recommendations:

- Use a semipermeable clear dressing with absorbent, nonadherent gauze, such as Opsite or Tegaderm.
- If the health care worker is allergic to the semipermeable dressing, use a hydropolymer adhesive waterproof dressing with nonadherent absorbent pad such as Allevyn or Tielle.
- Keep the initial dressing in place for one to four days following vaccination unless there is fluid around the edge of the gauze in the clear products or discoloration of the other products.
- Cover the dressing with plastic wrap when showering.
- At the start of each work shift, vaccinated employees should report to a skin-care team, which may include employee health nurses. The team will check that the dressing is intact, change the dressing as needed, and ask about signs or symptoms of adverse reactions. Team members should change gloves between removing the old dressing and applying the new. They should use good hand hygiene, which can include alcohol-based gels.
- Advise vaccinated employees to use good hand hygiene and contact the team if any problems develop at home.
- Discard dressings and scab as regulated medical waste.

By taking those precautions, hospitals can protect patients from any potential risk, according to **William Scheckler**, MD, hospital epidemiologist at St. Mary's Hospital Medical Center in Madison, WI, and a HICPAC member.

"The data are quite good that [such precautions] will contain the virus," he says. "It's a perfectly safe way to take care of patients."

Placing vaccinated health care workers on administrative leave until the scab separates would not be a practical plan, particularly in light of the current nursing shortage, says **Jane D. Siegel**, MD, professor of pediatrics at Southwestern Medical School of the University of Texas in Dallas and chair of the HICPAC bioterrorism working group. "That would be an incredible crisis for health care delivery," she says.

Daily monitoring of the injection site also provides an opportunity for hospitals to monitor adverse reactions. The monitoring team will be asked to collect data on:

- the days of heaviest drainage for takers of vaccine;
- fever, chills, fatigue, headaches, lymphadenopathy;
- days off work;
- severity of pain/pruritis;
- presence of oral lesions;
- lesions outside of vaccination site;
- secondary infections.

The Clinical Immunization Safety Assessment system will provide a national hotline for questions about adverse events. Physicians knowledgeable about the smallpox vaccine will provide consultation and referral, and vaccine immune globulin and cidofovir will be available to treat more severe adverse events. ■

That would include medical directors of the intensive care unit and the emergency department, nursing administration, and managers of human resources and workers' compensation, she says. "We have got to mobilize our resources and come up with a plan for how to monitor [vaccine reactions] before we administer vaccine."

Amid concerns over a possible war with Iraq and suspicions that Iraq may use smallpox as a biological weapon, vaccination plans have taken on a new urgency. Yet no one knows how many health care workers are likely to agree to take the vaccine, due to the risk of adverse events.

"I know some of the nurses at our hospital have said, 'I'll take it, but only if my whole family gets it,'" says **William Scheckler**, MD, hospital epidemiologist at St. Mary's Hospital Medical Center in Madison, WI, and professor at the University of Wisconsin Medical School. "Others said, 'I'll never get it. It's too dangerous.'"

Family members will not be offered the vaccine as a part of this program, he notes. However, if health care workers have household contacts with contraindications, such as compromised

ACIP Recommendations for Smallpox Vaccinations

The Advisory Committee on Immunization Practices recommends:

- ✔ Hospitals should establish at least two smallpox health care teams to ensure adequate care.
- ✔ Health care workers involved in direct patient care should keep their vaccination sites covered with gauze or similar absorbent material in order to absorb exudates that would develop.
- ✔ Health care workers should keep the vaccination site covered, [outside of] direct patient care, until the scab separates. Vaccinia, which is a live virus mutant smallpox vaccine, can be transmitted by direct person-to-person contact, and steps need to be taken to reduce this likelihood.
- ✔ Health care workers do not need to be placed on leave because they receive smallpox vaccination unless they are physically unable to work due to systemic signs and symptoms of illness, or if they do not adhere to the recommended infection control precautions.

Source: John Modlin, MD, Chair, Advisory Committee on Immunization Practices, Atlanta. Oct. 17, 2002.

immunity, they will not receive the vaccine.

"I'm not sure you can get 100 people in our hospital to go through with it," says **Lucy Tompkins**, MD, PhD, medical director of hospital epidemiology at Stanford (CA) University Medical Center and an ACIP member. She will receive the vaccine as part of the team monitoring vaccine reactions at her hospital. "My personal feeling is that in my lifetime, I will probably never see smallpox."

While the actual risk of a smallpox event can't be calculated, the risk of adverse events related to the live vaccinia (cowpox) vaccine is the focus of study and debate.

Pre-screening health care workers for contraindications to the vaccine could reduce potential adverse events by at least 50%, Modlin says. Yet in that process, as many as 20% of health care workers may be eliminated from vaccination due to skin conditions alone. For those with a history of atopic dermatitis, the vaccine can lead to generalized eczema vaccinatum, in which a large section of the body becomes infected with vaccinia. Because it's difficult to screen for atopic dermatitis — many people may not have an accurate diagnosis — ACIP recommends excluding people with eczema or exfoliative conditions. Contact dermatitis is not a contraindication. Anyone with a household contact who has a contraindication to the vaccine, such as eczema, also would not receive the vaccine.

Before vaccination, all health care workers would receive an advice packet containing information about contraindications and a medical screening checklist. They would be offered an opportunity for HIV testing and pregnancy testing, but the testing would not be mandatory, according to the recommendations. Women also would be advised to use effective contraception until one month after vaccination.

The most severe reactions to the vaccine include postvaccinal encephalitis and progressive vaccinia, which involves progressive necrosis in the area of vaccination, often with metastatic lesions.

Based on past experience with the vaccine, the CDC estimates that there could be one death per million people among those receiving the vaccine for the first time and 0.25 deaths per million among those who have been previously vaccinated. Public health authorities hope to reduce that risk by eliminating those who have HIV or other disorders that affect immune sufficiency, or who have household contacts with an immune disorder.

The ACIP/HICPAC plan involves using a diluted formula of the existing Dryvax vaccine supply, with 15 quick sticks using a two-pronged needle. (The needles do not contain a safety feature.) Until the injection site heals completely, with the scab separating from the skin, vaccinated health care workers could accidentally inoculate other people or themselves. Yet advisory panel members emphasized that the risk of transmission of vaccinia from injection sites to patients is low.

Who will assume liability for the effects?

Each hospital would be responsible for monitoring the injection sites to make sure they're covered properly. "It is also important to note that the very close contact required for transmission of vaccinia to household contacts is unlikely to occur in the health care setting," Modlin says.

No matter how careful the screening process, some adverse events will occur, public health authorities acknowledge. That leaves a lingering question: Who will assume the risk for those adverse events? ACIP did not address the liability issue, noting that the Department of Health and Human Services will consider those concerns. Smallpox is not a part of the National Childhood Vaccine Injury Act, which provides compensation for people who have adverse effects from vaccines.

Contraindications to Smallpox Vaccination

- ☐ **Eczema/atopic dermatitis:** No one with these skin conditions, a history of eczema, or household contacts with these skin conditions should receive the smallpox vaccine.
- ☐ **Pregnancy:** Smallpox vaccine should not be administered in a pre-event setting to pregnant women or to women who are trying to become pregnant. Before vaccination, women of child-bearing age should be asked if they are pregnant or intend to become pregnant in the next four weeks. Women who respond positively should not be vaccinated. In addition, women who are vaccinated should be counseled not to become pregnant during the four weeks after vaccination. However, routine pregnancy testing of women of child-bearing age was not recommended.
- ☐ **Altered immunocompetence:** People with conditions that makes them immunodeficient, such as leukemia, lymphoma, organ transplant, or generalized malignancy, or those with household contacts who have such a condition, should not receive the vaccine.
- ☐ **HIV infection:** People with HIV infection or AIDS are at increased risk of progressive vaccinia or vaccinia necrosum following smallpox vaccination. Therefore, smallpox vaccine should not be administered to those with HIV infection or AIDS. Before vaccination, potential vaccinees should be educated about the risks of severe complications from smallpox vaccine among people with HIV infection or other immunosuppressive conditions. People who think they may have one of these conditions should not be vaccinated. ACIP does not recommend mandatory HIV testing prior to smallpox vaccination, but recommends that HIV testing should be readily available to all those considering smallpox vaccination. HIV testing is recommended for people who have any history of a risk factor for HIV infection and who are not sure of their HIV infection status.
- ☐ **Children and adolescents:** Routine, nonemergency smallpox vaccination is not recommended for infants and children younger than 18.
- ☐ **Allergy to vaccine components:** When using the Dryvax vaccine, individuals with anaphylactic reactions to polymyxin B sulfate, streptomycin sulfate, chlortetracycline hydrochloride, and neomycin should not be vaccinated.

Source: Advisory Committee on Immunization Practices, Atlanta. Oct. 17, 2002.

For now, hospitals are assuming that workers will be covered by workers' compensation. "If employees have adverse effects to other vaccines, then that is work-related," Gruden notes. "I don't see why smallpox would be any different."

Although ACIP doesn't recommend furlough for vaccinated health care workers, some will miss work due to even mild or moderate effects, including rash and fever. The vaccination plan should take into account the possibility of such absences, employee health experts note.

While hospitals prepare for vaccination, those in employee health should gather educational material on smallpox and the vaccinia vaccine, Gruden advises. After all, employees with concerns or questions will turn to employee health. "They're going to call us. They're not going to call the health department," she says.

(Editor's note: More information on smallpox and the vaccinia vaccine is available at http://www.bt.cdc.gov/agent/smallpox/index.asp.) ■

Rising injury rates linked to nursing shortage

JCAHO cites injuries, sick time as key indicators

Employee injury rates are gaining attention as one sign of nurse staffing problems. As concerns rise over a growing nursing shortage, employee health professionals have an unprecedented opportunity to link patient safety with worker safety.

Those links already have been acknowledged by the Joint Commission on Accreditation of Healthcare Organizations in Oakbrook Terrace, IL. Staffing has been a factor in about one-quarter of all sentinel events that result in patient death or injury, the Joint Commission revealed in a landmark report. The report cited a poor work environment, including mandatory overtime and difficult physical demands, as contributing to low satisfaction and high turnover among nurses.[1]

The new Joint Commission staffing effectiveness standard, which became effective in July 2002, puts employee health at the forefront of this issue. Hospitals must collect data on two human resource indicators and two patient outcomes indicators. Staff injuries on the job and sick time are two possible human resource indicators.

"The work environment is the intersection of all things," says **Katherine Kany**, RN, senior policy fellow at the American Nurses Association in Washington, DC. "When you have a safe work environment, everybody benefits."

Meanwhile, research is emerging that connects low staffing with worker injury. In a study of 22 hospitals, researchers at the University of Pennsylvania School of Nursing found that work climate, including staffing, was even more strongly associated with needlestick injuries than safety devices.[2] "The take-home message is that staffing impacts worker safety as well as patient safety," says **Sean Clarke**, RN, PhD, associate director of the university's Center for Health Outcomes and Policy Research. "If we're trying to make hospitals better, safer places, we need to look at both [issues]."

Further research is under way on the relationship between staffing, musculoskeletal disorders, and overall injuries. Employee health professionals can look at their own data to uncover links between staffing and injuries, suggests **Pat Stone**, PhD, RN, assistant professor at the Columbia University School of Nursing in New York City. "This is a unique opportunity to use [employee health] data to demonstrate the effect they're having on a larger [picture]. Your data are outcome data that we're using," she says to EHPs. "We're using your data in a different way."

Stone's research parallels the new performance data requirements of the Joint Commission. She and her colleagues have enrolled 77 hospitals across the country to look at nursing care per patient day, licensed staff per patient day, nursing satisfaction and perception of the work climate, as well as patient outcomes and employee injury rates. The focus is on the intensive care units of the hospitals.

The Joint Commission staffing effectiveness standard states, "The hospital provides an adequate number of staff members whose qualifications are consistent with job responsibilities." Performance indicators are the method for tracking compliance with that standard. **(See box, at right.)** In a streamlined accreditation process set for 2004, the Joint Commission will track individual patients and interview staff and physicians to determine compliance. **(See related story, p. 139.)**

"Over time, [hospitals should] see if there is a relationship between staffing levels and patient outcomes," says **Charlene Hill**, Joint Commission spokeswoman. "If there is, they should make the necessary corrections and continue to track it and see if they made the correct changes."

Stone's research will look at the impact of deep cost cutting at hospitals, comparing data from before and after the Balanced Budget Act of 1997. In the three years of her study, concerns have grown about the nursing shortage, mandatory overtime, and understaffing.

Joint Commission Staffing Effectiveness Standard

In the new staffing effectiveness standard, which became effective July 2002, surveyors from the Joint Commission on Accreditation of Healthcare Organizations in Oakbrook Terrace, IL, will look at actual vs. planned staffing in organizations. Through document review, interviews with leadership and staff, and visits to patient care units, the surveyors will look at these factors:

- Screening indicators selected
- Rationale for indicator selection
- Data for the chosen indicators
- Results of the organization's analysis of the data
- Actions taken on the basis of the analysis

Hospitals must choose a minimum of four screening indicators, two clinical/service-related and two human resource-related. At least one indicator in each category must be selected from these lists:

- Human resource indicators
- Nursing care hours per patient day
- On-call or per-diem use
- Overtime
- Sick time
- Staff injuries on the job
- Staff satisfaction
- Staff turnover rate
- Staff vacancy rate
- Understaffing as compared to organization's staffing plan
- Clinical/service indicators
- Adverse drug events
- Family complaints
- Injuries to patients
- Length of stay
- Patient complaints
- Patient falls
- Pneumonias
- Postoperative infections
- Shock/cardiac arrests
- Skin breakdowns
- Upper gastrointestinal bleeding
- Urinary tract infections

This year, California became the first state to set minimum nurse staffing ratios. The ratios vary by unit. For example, in intensive care, the ratio is one nurse for two patients. In general medical/surgical, the ratio will be one nurse for every five patients.

Meanwhile, six states (Maine, Maryland, Minnesota, Oregon, New Jersey, and Washington) have passed laws that ban or limit mandatory overtime.

The issue isn't just staffing, Stone says. "It's organizational climate, leadership, staffing, and overall working conditions. Staffing is an important component but not the only component."

If hospitals are feeling the pinch of a nursing shortage now, they should brace themselves. It's going to get worse. As fewer young people pursue nursing careers, the overall age of the nursing work force is 43 and rising. There are already 126,000 unfilled nursing positions across the country, according to the American Hospital Association. The retirement of the older nurses and the aging of the U.S. population will coalesce, and by 2020, there will be a projected shortage of 400,000 nurses.[3]

The consequences already are measurable. Nurse staffing levels are associated with hospital

JCAHO unveils streamlined, consistent surveys

Changes focus on self-assessment, patient stay

Promising that surveys will become more streamlined and patient-focused, the Joint Commission on Accreditation of Healthcare Organizations unveiled a new accreditation process, set to begin in 2004.

The Joint Commission said surveys will be more objective and consistent, with consolidated standards that encompass fewer scorable elements and rely less on document review. Surveyors will be required to pass a certification exam and their own performance will be tracked.

Hospitals will conduct a self-assessment midway through the three-year accreditation cycle that will largely guide the survey process. That change will promote continuous quality improvement, and "it will shift the basic ownership of the accreditation process from the Joint Commission to the organization," announced **Dennis O'Leary**, MD, JCAHO president.

The new process may be a welcome change for employee health professionals, who struggle to second-guess the focus of a particular survey team.

"I would think a self-assessment would be very useful," says **JoAnn Shea**, MSN, ARNP, director of employee health and wellness at Tampa (FL) General Hospital, which recently completed an accreditation survey. "It would allow the institutions to write the positives up and also write up their opportunities: 'We have challenges here, but here's what we're doing about it.'"

A surveyor zeroed in on sharps injuries, particularly in the operating room (OR). Shea had analyzed her sharps data and discovered that 33% of the hospital's bloodborne pathogen exposures occur in the OR, as do 26% of hepatitis C exposures.

Although the hospital has reduced exposures elsewhere in the hospital with safer devices, the OR rate has remained stable. Shea is implementing new instrument-passing rules and is looking for new devices that will be acceptable to the surgeons. The surveyor gave the hospital a supplemental recommendation — one that does not affect the score but provides incentive for change. "We're going to have a meeting and come up with some better recommendations to decrease our exposures in the OR," she says.

It's not clear how the new accreditation process will impact employee health. The Joint Commission has issued National Patient Safety Goals and plans to focus on individual patient experiences in its new accreditation process. But in a press conference, O'Leary insisted that worker safety is still a part of that focus. "One of the indices of an overtired, overworked nursing staff is an increase in needlestick injuries," he said. "I think it really speaks to the fact that a safe, healthy staff are more likely to provide safe care for patients. That's why we build those connections into our process."

In the new process, surveyors will select patient records and follow records through their care, talking to nurses, physicians, and other health care workers.

"With this new process, surveyors are on the floor talking to physicians while the physicians are doing the procedures," explains **Charles R. Young**, MHA, administrator of Shriners Hospitals for Children in Spokane, WA, which pilot tested the new process. "Our clinicians were animated in their discussion of how well they like the new process, how it got them more involved."

Katherine West, MSEd, CIC, a Mannasas, VA-based infection control consultant who helps hospitals prepare for Joint Commission surveys, asked how new Health Insurance Portability and Accountability Act privacy regulations might affect the Joint Commission plans. But she says plans to certify surveyors and create more consistency are badly needed. "There's been no continuity and consistency in what they said, their level of training, what they surveyed for," she says. "It's a real plus if they're going to be looking at exactly the same things the same way." ■

infection rates and patient outcomes, including complication rates and length of stay.[4] A recent study of discharge data from almost 800 hospitals in 11 states found that a higher number of hours of care by registered nurses was associated with a shorter length of stay and lower rates of both urinary tract infections and upper gastrointestinal bleeding. A higher proportion of hours of care provided by registered nurses also was associated with lower rates of pneumonia, shock, or cardiac arrest.[5] In other words, adequate staffing can be a life-or-death issue.

Those troubling research findings prompted Joint Commission president **Dennis S. O'Leary**, MD, to issue a "call to action" in August that included a focus on worker safety.

"Dramatic changes must be made now and in the next few years to avoid a full-blown crisis in the care of patients," he said. "This means fostering a workplace that empowers nurses and is respectful of other skills, broad adoption of information and ergonomic technologies to transform the work of nurses, setting staffing levels based on nurse competency and skills relative to patient mix and acuity, and establishing zero-tolerance policies for abusive behaviors by health care practitioners."

A focus on staffing will have a direct impact on employee health. Creating a safe workplace is an important aspect of retention, according to the Joint Commission report, which specifically includes ergonomics among its recommendations for creating "organizational cultures for retention."

Researchers are trying to document the link between staffing and musculoskeletal disorders (MSDs). At the University of Maryland School of Nursing in Baltimore, professor **Alison Trinkoff**, RN, ScD, FAAN, and her colleagues are studying nursing schedules, the physical demands of the job, and injuries of the neck, back, and shoulder.

"In general, we find that the more atypical your schedule is, the more demanding it is," she says. "The more you get away from 9 to 5, the more likely we were to see people reporting injuries."

At the Mount Sinai School of Medicine in New York City, **Paul Landsbergis**, PhD, assistant professor, is studying work schedules, overtime, working conditions, and MSDs. "We know that work stress, in general, can increase the risk of hypertension and heart disease as well as have some [increase in] risk of [MSDs]."

The link between needlesticks and work pressures already has been established. In a study of 22 hospitals, Clarke and his colleagues at the University of Pennsylvania surveyed about 2,300 nurses. They found that nurses were 50% more likely to report a needlestick at hospitals where administrative support was rated low and patient loads were the heaviest. In near misses as well as needlesticks, organizational climate and staffing had an even greater impact than the use of safety devices. The study focused on hospitals that had been recognized for high quality or had a reputation for attracting and retaining nurses.

"Creating a safe workplace is one of the most compelling ways that an employer can show the employee that they're valued," Clarke says. "The easy step is to select equipment that reduces the risk of injury. [Setting a positive organizational climate] is tougher — to think through staffing and make the staffing as fair as possible [and] to set up the impression among employees that administration responds to problems."

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Reuse of needles in clinic sparks HCV outbreak

Case highlights worries about HCV transmission

More than 50 patients were infected with hepatitis C at an Oklahoma pain management clinic when a nurse reused a syringe and needle for injections into a heparin lock of the patients' IV line. The case, which is still under investigation, represents the largest known nosocomial transmission of hepatitis C in the United States, says **Michael Crutcher**, MD, state

epidemiologist with the Oklahoma State Department of Health in Oklahoma City.

Cross-transmission of hepatitis C through improper procedures is gaining increasing scrutiny nationwide. In Fremont, NE, the state department of health identified 10 patients who became infected at a hospital-based oncology clinic and recommended the testing of more than 600 patients. The American Association of Nurse Anesthetists sent a letter to 33,000 members, students, and hospital administrators, emphasizing the dangers of reusing needles.

In the Oklahoma case, a nurse anesthetist drew medication into a single large syringe and injected it into the IV lines of numerous patients, Crutcher says. The nurse tested negative for hepatitis C. "The hypothesis is that a chronically infected person served as a reservoir of infection for other persons," says Crutcher, who noted that 15 patients also tested positive for hepatitis B. "Once you've infected one person, and that person comes back in, [he or she] can serve as a reservoir. It can amplify over a short period of time where you have numerous patients who are infected."

About 600 patients who were treated at the clinic based at Norman Regional Medical Center since 1999 have received letters that recommend testing. The anesthesiologist and nurse anesthetist also worked at two other hospitals in the area, says **Karen Carraway**, manager of community relations at Norman Regional. They are not employees of the hospital.

The transmission came to light when a local gastroenterologist noticed a cluster of six patients with hepatitis C. Their only commonality: They had all received pain management services from the same anesthesiologist and nurse anesthetist.

When the hospital learned of the cluster, it immediately asked for an investigation by the health department, Carraway says. "The main thing is to keep in mind that we're here for the patients," she says.

Reports of the needle reuse also prompted an inspection by the U.S. Occupational Safety and Health Administration into needle safety practices.

Norman Regional Medical Center received two citations, but neither related directly to the needle reuse. The hospital was cited for failing to list the type and brand of device on the sharps injury log and failing to update and review the exposure control plan annually.

The update actually had occurred but had not been entered on the hospital's intranet, and the additional sharps information had been recorded separately, Carraway says. Those issues were abated, and the fine was cut in half, to $562.50 for each citation, she says.

"The person who had used the unsafe needles was not an employee of the hospital; he was self-employed," says **Diana Petterson**, spokeswoman for the Department of Labor, who notes that the hospital uses safe needle devices. ■

What to do when you can't do it all

EHPs learn to set limits, priorities

Do more with less. Comply with regulations; manage workers' compensation costs; and create new injury prevention programs. But, by the way, we're cutting your staff.

Too often, that is the mixed message from administration. In a time of ever-tighter resources, employee health professionals must sort through the demands on their time to determine what must be done and what can be sidelined.

"It's been a learning experience for me to say, 'This is all I can do,'" says **MaryAnn Gruden**, MSN, CRNP, NP-C, COHN-S/CM, employee health nurse practitioner at Western Pennsylvania Hospital in Pittsburgh and executive president of the Association of Occupational Health Professionals in Healthcare.

She lost 12 hours a week of clinical help when her nurse's hours were cut back from 32 to 20; she has no clerical support. With just 1.5 full-time equivalent employees to provide services for 2,500 health care workers, Gruden needed to set priorities and parameters.

She told administrators how services would need to modified in order to accommodate the reduction and sent e-mails to managers with some new procedures. Employees can no longer drop in to employee health and request documentation of past test results. Looking up those records will now take seven to 10 days. Daily walk-in times were established for routine services such as TB testing and immunizations. Other types of visits, such as return-to-work reviews and evaluation of work-related injuries, are scheduled by appointment.

"We'll see them as soon as we can," Gruden says. "If we're in the middle of physicals and it's not an urgent event, that person can wait. It's a shift in the paradigm. That's hard, because as

nurses, we're used to being all things to all people at all times. I feel I've had to draw the line in the sand and say, 'This is what I can and can't do.'"

In fact, employee health experts say it's important for employee health professionals to focus on the big picture — reducing injuries — and not to become overwhelmed by the routine tasks.

An analysis of a survey by the American Board of Occupational Health Nursing in Hinsdale, IL, found that occupational health nurses are spending more of their time evaluating outcomes and using business skills to set priorities. **(See related story below.)**

"Sometimes we forget we aren't just here to do exams, TB tests, and physicals," explains **Charlene M. Gliniecki**, RN, MS, COHN-S, vice president of human resources at El Camino Hospital in Mountainview, CA, and a former employee health director. "We're really here to support the organization, to support employees to be healthy on the job, to support managers, and to be very aligned with the business."

Here are some keys to working with limited resources:

- **Stay focused on your top priorities.**

Your days are spent with tasks that must be accomplished to stay current with regulations and expectations of the Occupational Safety and Health Administration (OSHA) and the Joint Commission on Accreditation of Healthcare Organizations. But you should seek efficiency in those tasks and instead spend time on injury prevention, which could have a direct impact on workers' compensation costs, Gliniecki advises.

For example, some employee health professionals use health history questionnaires to determine which newly hired employees should receive focused physical exams. El Camino Hospital still conducts pre-placement physicals, but she notes that they are "very focused" exams.

"You do have to challenge assumptions. Doing more with less means saying, 'Why do we do this? Do we really need to do this? Why do we do this *this* way?'" Gliniecki points out.

- **Keep managers and administrators informed of employee health goals and processes.**

Managers can be the best allies of employee health. In fact, you need their active support to prevent injuries among staff. At El Camino, the employee health department analyzes the incidence and cost of injuries by unit. Managers are responsible for addressing those issues.

"Employee health professionals have expertise that can help managers identifying preventive

Add this to your to-do list: A dose of business savvy

Survey finds OH nurses take on business tasks

Occupational health nurses are increasing their focus on outcomes and using information technology to meet their goals, according to a survey of some 2,000 occupational health nurses by the American Board of Occupational Health Nurses (ABOHN) in Hinsdale, IL. About one-quarter of the respondents were hospital-based.

Business and management skills play a greater role in the job of the occupational health nurse, according to an analysis of the survey and a comparison to a similar survey in 1996. **Mary C. Amann**, RN, MS, COHN-S/CM, executive directory of ABOHN, presented the findings at the annual conference of the Association of Occupational Health Professionals in Healthcare in October.

"People are starting to prioritize and to do cost effectiveness analysis of their interventions," Amann says. "There was a significant increase in the number of information management related items, things like record keeping, reporting, trending, and tracking. [Occupational health nurses] are analyzing more."

In the role delineation survey, ABOHN seeks to determine the job tasks and their relative importance to occupational health nurses. For example, OH nurses identified numerous business-related items, saying they conduct quality management, establish goals and objectives, develop/design budgets, develop policies and procedures, conduct cost/benefit analysis, analyze illness/injury rates, and apply knowledge of business cycles and forecasts to market programs.

The study was administered in 2000 and had a response rate of 33%. It was designed to ensure that the credentialing process reflects current practice in occupational health nursing, and it will be repeated in 2004.

ABOHN also surveyed managers to learn about their expectations of occupational health nurses. "They're interested in compliance. They're interested in cost. They see the occupational health nurse as being in a position to help them with those things," Amann says.

Occupational health nurses remain involved in traditional tasks, such as health surveillance and worksite assessment. The greater use of information technology and integration of business skills enhances the value of the occupational health nurse, she adds. ■

strategies, supporting employees who need some coaching, helping with transitional work, and reducing lost workdays," Gliniecki says.

For example, in one unit with a high number of lost workdays, employee health helped design ergonomic interventions. The CEO later highlighted the unit's injury reduction as an example of quality improvement.

"Helping people get credit for the successes makes them more interested in having you around," Gliniecki says.

Employee health presents information at the nursing management council and the performance improvement committee. Meanwhile, employee health relies on managers to help with basic tasks. They can make sure their staff are up to date on immunizations and that they respond to reminders about TB tests.

- **Tap into other resources at the hospital.**

If you don't have enough man-hours to do the work, who are you going to turn to? Sometimes, you can build partnerships among the staff or even make use of volunteers.

Gruden uses volunteers to help with some basic clerical tasks, such as organizing the filing system. However, concerns about confidentiality limit the clerical tasks that can be delegated.

Some hospitals train unit nurses to read TB tests. If there is any reaction at all, the employee is referred to employee health. Meanwhile, employee health staff still must track down employees who have not received the annual screening.

- **Make employee health part of the bigger picture.**

No matter how great or small your resources are, your job will be easier if you are viewed as an integral part of the organization.

At El Camino, job descriptions from housekeepers to senior managers include a health and safety component. Failure to comply with basic requirements can affect the performance review or even the paycheck.

"If people don't get their TB screen, they will not be scheduled to work. It is a requirement," Gliniecki notes. Needless to say, that improves compliance, and it places the burden on the

(Continued from cover page)

The committee recommends that the team include a minimum of 40 health care workers per hospital, with some hospitals vaccinating 100 or more, including emergency department physicians and nurses, infection control professionals, intensive care unit nurses, infectious disease consultants, radiology technicians, respiratory therapists, engineers, security, and housekeeping staff.

To help you prepare for sweeping procedural changes, American Health Consultants offers **Imminent Smallpox Vaccinations in Hospitals: Consequences for You and Your Facility**, a 90-minute audio conference Wednesday, Dec. 11, from 2-3:30 p.m., EST.

This session is designed to help you and your staff answer serious questions and prepare your facility for the inevitable. How will being vaccinated affect you? How do you protect yourself, patients, and family? What are the logistics of implementing a smallpox care team? How do you deal with vulnerable populations? How do you minimize side effects?

This panel discussion will be lead by **William Schaffner**, MD, chairman of the department of preventive medicine at Vanderbilt University Medical Center in Nashville, TN.

A veteran, award-winning epidemiologist who has seen actual cases of smallpox and currently oversees a volunteer smallpox vaccine study at Vanderbilt, Schaffner began his distinguished medical career as a medical detective in the CDC's Epidemic Intelligence Service. He also is a liaison member of ACIP.

Schaffner and an expert panel of emergency and infection control professionals will help you prepare for this critical task.

The cost of the program is $299, which includes 1.5 hours of free CE, CME, ACEP Category I, and critical care credits. You can educate your entire facility for one low fee.

The facility fee also includes handout material, additional reading and references, as well as a compact disc recording of the program for continued reference and staff education. For more information, or to register, call customer service at (800) 688-2421. When ordering, please refer to the effort code: **65341**. ■

COMING IN FUTURE MONTHS

- How one hospital made ergonomics habit-forming
- What to consider before you choose new gloves
- CDC releases new hand-hygiene guidelines
- Is a better TB test on the way?
- A hospital shares its history of smallpox vaccination

managers and the employees themselves.

Employee health provides quarterly information on lost workdays to division vice presidents. Again, that encourages those executives to share in the solutions. ■

CE *questions*

This month concludes the CE semester. Please return the enclosed survey form.

21. According to recommendations of the Advisory Committee on Immunization Practices, after vaccination with the vaccinia vaccine, health care workers should:
    A. return to work with the injection site covered by gauze and a bandage
    B. be furloughed for at least three days
    C. be restricted in their patient care duties
    D. be isolated from contact with family members, patients, and others
22. Since HIV is a contraindication for smallpox vaccination, ACIP says health care workers who receive the vaccine should:
    A. be tested with a rapid HIV test
    B. be offered an HIV test
    C. be referred to private physicians
    D. be given prophylaxis for HIV
23. In the Joint Commission's staffing effectiveness standard, which of the following is among the human resource indicators?
    A. use of the Family and Medical Leave Act
    B. mandatory overtime
    C. staff injuries on the job
    D. average years of service
24. According to an analysis of a survey by the American Board of Occupational Health Nursing, occupational health nurses are spending more time in which activity?
    A. conducting TB screening tests
    B. completing regulatory documentation
    C. attending educational sessions
    D. evaluating outcomes and using business skills to set priorities

Answers: 21. A; 22. B; 23. C; 24. D

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. ■

Hospital Employee Health
Continuing Education Evaluation

Please take a moment to answer the following questions to let us know your thoughts on the continuing education program. Place an "x" in the appropriate space and return this page in the envelope with your test answer form. Thank you.

For your reference, here is the stated purpose of *HEH*:

To provide hospital employee health professionals with the most comprehensive and up-to-date news and information they need to successfully meet the health care needs of hospital employees.

Did *Hospital Employee Health* enable you to meet the following objectives*:*

yes__ no__ 1. Are you able to identify particular clinical, administrative, or regulatory issues related to the care of hospital employees?

yes__ no__ 2. Are you able to describe how those issues affect health care workers, hospitals, or the health care industry in general?

yes__ no__ 3. Are you able to 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?

yes__ no__ 4. Did these objectives help accomplish the overall purpose of the program?

yes__ no__ 5. Were the teaching/learning resources effective for this activity?

_____ min. 6. How many minutes do you estimate it will take you to complete **this entire semester's** (6 issues) activities? Please include time for reading, reviewing, testing, and studying the answer sheet, which you will receive with your certificate. One nursing contact hour equals 50 minutes.

yes__ no__ 7. Were the test questions clear and appropriate?

yes__ no__ 8. Were the instructions clear and appropriate?

yes__ no__ 9. Were you satisfied with the customer service for the CE program?

10. Do you have any general comments about the effectiveness of this CE program? Please list on the lines provided.

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