



Hospital Employee Health®

August 2002 • Volume 21, Number 8 • Pages 85-96

IN THIS ISSUE

Who will you vaccinate against smallpox?

A smallpox vaccination plan that was recommended by the Advisory Committee on Immunization Practices leaves many unanswered questions about who should be vaccinated. Under the plan, states would identify smallpox referral hospitals and individual hospitals would decide which personnel to vaccinate. But some employee health experts are questioning how they would determine who is at risk — and who needs the vaccine cover

Smallpox Q&A

The Centers for Disease Control and Prevention and ACIP answer questions on smallpox vaccination: Who should be vaccinated? When will vaccinations start? What are some of the side effects? 87

HCV-positive surgeon infects patients

In a case that has raised new questions about hepatitis C transmission, a cardiac surgeon in Long Island, NY, has transmitted the virus to at least three patients. The transmission went undetected for about seven years. Some needle safety experts are calling for guidelines that would restrict infected health care workers from certain exposure-prone procedures and would provide post-exposure testing and treatment for patients 88

Continued on next page

Smallpox vaccination of some health care workers may not go far enough

ACIP plan limits vaccine to selected hospitals

Plans to vaccinate selected health care workers against smallpox are a good first step but don't go far enough to protect those workers in the event of a bioterrorism event, employee health and emergency management experts say.

In June, the Advisory Committee on Immunization Practices (ACIP) recommended that only smallpox response teams and certain clinical personnel at smallpox referral hospitals receive smallpox vaccinations. Nationwide, some 10,000 to 20,000 people might receive the vaccine under that plan, says **Julie Gerberding**, MD, acting deputy director of the Centers for Disease Control and Prevention (CDC). (For a copy of the ACIP recommendations, go to: www.cdc.gov/nip/smallpox/supp_recs.htm.)

However, as hospitals consider their bioterrorism preparedness, the vaccination of a few key staff — from lab workers and security guards to doctors and nurses — might not be enough to create confidence among employees if smallpox cases are diagnosed, says **Robert Wise**, MD, vice president of the division of research standards at the Joint Commission on Accreditation of Healthcare Organizations.

"As a strategy to give health care workers the confidence to keep coming to work, it's moving in the right direction," Wise says. "I don't think it's a complete enough solution to be able to guarantee or predict the number of health care workers who would be willing or available to work through this kind of epidemic."

Wise notes that the Joint Commission expects

NOW AVAILABLE ON-LINE!
www.ahcpub.com/online.html
For more information, contact (800) 688-2421.

NIH panel fails to recommend early HCV treatment

There isn't enough evidence to warrant a recommendation for early treatment of acute hepatitis C infection, a consensus panel of the National Institutes of Health decided. Occupational health physicians and nurses should consult a specialist to determine the proper course of treatment for newly infected health care workers, an HCV expert said after the consensus conference. 90

No procedures are exposure-prone for HIV, ACOEM says

In the past 10 years, no new cases of HIV transmission from health care providers to patients have been reported. With that lack of evidence of transmission, the American College of Occupational and Environmental Medicine has concluded that no procedures are exposure-prone for HIV and HIV-infected health care workers should not be restricted in their job duties. 91

Don't reuse tube holders, OSHA says

OSHA may have turned a blind eye to the reuse of blood tube holders in the past, but with a new clarification issued by the agency, citations are likely on the practice, employee health experts say 92

Lower risk of TB prompts comments to OSHA

Do hospitals still need an OSHA regulation to protect health care workers from tuberculosis? The American Hospital Association urged OSHA to rely on voluntary guidelines, while the Service Employees International Union noted that health care workers remain at risk 93

Literature Review

Transmission of Hepatitis B

Transmission of hepatitis B from a surgeon to patients occurred in procedures not considered 'exposure-prone,' the authors reported. They urge the reconsideration of procedures as exposure-prone or nonexposure-prone 94

COMING IN FUTURE ISSUES

- Profile of an award-winning wellness program
- Assessing — and reducing — respiratory hazards
- Why low nurse staffing can make employees and patients sick
- New push to vaccinate health care workers
- Update on ergonomics: Will OSHA target patient handling?

hospitals to consider the needs of employees' families in an emergency response. "If the health care workers and their family do not feel safe, then you're not going to be able to get the health care workers to continue to work," he says.

ACIP, an expert advisory panel, issues policy recommendations to CDC and the Department of Health and Human Services (HHS). The recommendations could be altered by the CDC and HHS.

ACIP clearly was trying to take a middle road between widespread vaccination and waiting until actual cases are identified. Smallpox vaccination is effective even a few days after exposure, and vaccination of smallpox victims' contacts is a key strategy of containment.

But Wise and others questioned the wisdom of selecting hospitals that would handle smallpox cases.

While it makes sense to limit exposure to designated facilities that are prepared to handle cases, "in practice, there's always the question about whether or not that will actually work," says **Susan McLaughlin**, a Barrington, IL-based consultant in health care safety and regulatory compliance who specializes in emergency preparedness.

After all, people with early symptoms are likely to show up at the nearest emergency department or doctor's office regardless of federal and state planning, she notes.

No one knows the risk

The most important question about smallpox vaccination is the one that can't be answered: What is the risk of exposure?

ACIP characterized the risk of deliberate release of smallpox by terrorists as low, and stated, "the population at risk for such an exposure cannot be determined." Hospitals prepared to treat smallpox cases would be designated in state bioterrorism response plans, and the individual hospitals would decide who should be vaccinated, the panel said.

But without any further guidance on risk assessment, it's difficult to make a decision about who needs the vaccine, explains **Geoff Kelafant**, MD, MSPH, FACOEM, medical director of the occupational health department at the Sarah Bush Lincoln Health Center in Mattoon, IL.

"Where do you stop? If the EMS people are getting [the vaccine], then the emergency room people are getting it. If the emergency room people are getting it, why shouldn't the intensive care personnel get it?" he asks.

"It becomes a policy issue, not just a medical issue," says Kelafant, who is chairman of the medical center occupational health section of the American College of Occupational and Environmental Medicine in Arlington Heights, IL.

In a press briefing after the ACIP meeting, chairman **John Modlin**, MD, explained that a predesignated response team would include "a team leader, a team physician, team nurses, public health personnel who would aid in quarantine and surveillance, and security/law enforcement personnel."

He did not outline any specifics about vaccinated hospital personnel. "The makeup of these teams would appropriately vary from one location to the next, depending upon the circumstances and the nature of the need and their requirements," says Modlin, who is professor of pediatrics and medicine at Dartmouth Medical School in Lebanon, NH.

Meanwhile, the CDC is trying to get a better assessment of the risks of vaccination. About 1,000 individuals per million vaccinated could have moderate-to-severe adverse effects from the vaccine, which is made from the live vaccinia (cowpox) virus. Five to 20 individuals per million would develop postvaccinial encephalitis, which could lead to neurological impairment or death.¹ Side effects are lowest among those who have previously been vaccinated, and highest among those who are immune-compromised.

"It's really important to help people understand that unlike all of the other vaccines that we use, this vaccine has special risks," Gerberding said at the press briefing, emphasizing that other vaccines have a higher level of safety.

The vaccination of health care workers would be voluntary, public health officials said. CDC also will establish an oversight board to monitor the use of the smallpox vaccine.

Because of the risks of the vaccine and the fears about bioterrorism, vaccination efforts must be accompanied by thorough employee education, says **MaryAnn Gruden**, MSN, CRNP, NP-C, COHN-S/CM, executive president of the Association of Occupational Health Professionals in Healthcare in Reston, VA, and employee health nurse practitioner at Western Pennsylvania Hospital in Pittsburgh.

Some employees may be afraid to have the vaccine, while others may be upset that they aren't included in the vaccination group.

But Gruden notes that a limited supply

Smallpox Vaccination Q&A

Q. Who would be vaccinated?

A. Smallpox response teams would include a team leader, a team physician, team nurses, public health personnel who would aid in quarantine and surveillance, and security/law enforcement personnel. Such teams also may include medical personnel who would assist in the evaluation of suspected smallpox cases. Smallpox referral hospitals would designate staff who would treat initial cases of smallpox.

Q. When will vaccinations begin?

A. At the earliest in Fall 2002.

Q. How much vaccine is available?

A. In addition to the limited current stockpile, at least 209 newly manufactured doses of smallpox vaccine will be available by the end of 2002 or early 2003. The Centers for Disease Control and Prevention estimates that supplies of smallpox vaccine could be available at the site of an outbreak anywhere in the United States within 12 to 24 hours.

Q. What are the possible side effects of the vaccine?

A. Swelling and tenderness at the vaccination site and fever are common side effects. More severe side effects include severe skin reactions, spread of the vaccine virus to other parts of the body, or encephalitis. Vaccine immune globulin could be used to treat some severe effects.

Q. How is smallpox transmitted?

A. Smallpox is transmitted from an infected person once a rash appears. Transmission does not occur during the prodromal period that precedes the rash. Infection is transmitted by large droplet nuclei and only rarely has airborne transmission been documented. Epidemiologic studies have shown that smallpox has a lower rate of transmission than diseases such as measles, pertussis, and influenza.

Sources: Centers for Disease Control and Prevention; Advisory Committee on Immunization Practices, Atlanta.

requires more selective vaccination.

"You can start to vaccinate people even once an outbreak starts," she notes. "I think that's another piece of the educational process."

Reference

1. Vaccinia (smallpox) vaccine recommendations of the Advisory Committee on Immunization Practices (ACIP), 2001. *MMWR* 2001; 50(RR10);1-25. ■

Surgeon-to-patient HCV infections raise questions

Will this be the case that changes national policy?

A Long Island, NY, cardiac surgeon, who unknowingly was infected with hepatitis C for about 10 years, transmitted the virus to at least three patients. This is the first such documented transmission in the United States that did not involve known lapses in infection control practices, and it has prompted new questions about the adequacy of patient protections.

This spring, North Shore University Hospital in Manhasset (NY) began notifying about 3,000 patients that they may have been exposed to hepatitis C during their cardiac surgery. So far, three cases have been confirmed through DNA matching, and another four cases are considered likely to be connected. State health officials are investigating 21 other cases, but they note that an estimated 2% of the U.S. population is infected with hepatitis C and many of those cases may be unrelated to the surgery.

The Centers for Disease Control and Prevention (CDC) does not recommend restricting the practice of health care workers with hepatitis C, and the identification of this cluster has not changed that position.

"At this time, there are no recommendations to restrict the activities of infected health care workers unless transmission is known to have occurred," says **Miriam J. Alter**, PhD, acting associate director for epidemiology and public health in the division of viral hepatitis at the CDC.

In fact, the surgeon is continuing to practice while using additional precautions, such as double-gloving and blunt sutures. His patients also must provide signed, informed consent. Patients are being tested for HCV before surgery and at a

six-week and three-month follow-up.

"It's unjustifiable to let that surgeon continue to operate after it's been documented that he infected multiple patients," asserts **Janine Jagger**, PhD, MPH, director of the International Health Care Worker Safety Center at the University of Virginia in Charlottesville, a needle safety expert who notes that if infected surgeons get cut with their hands deep inside a patient, there is the potential for a much larger blood exposure to the patient than is involved in a typical needlestick.

To Jagger, this case illustrates how unlikely it is to detect nosocomial transmission of HCV without adequate surveillance policies in place. "We need a real national policy on this issue. What we have now is a 'don't ask, don't tell' policy," she says.

"We need to identify exposure-prone procedures, which would include procedures in which health care workers' hands are inside a surgical site with sharp instruments," she says. "Then we need to define which pathogen-positive health care workers should not be performing these procedures.

Currently, post-exposure protocol exists only for an injured health care worker. There is no routine post-exposure notification or testing of patients who may be exposed to a bloodborne pathogen by an infected health care worker during invasive procedures, notes **Robert Ball**, MD, MPH, infectious disease consultant and epidemiologist with the South Carolina Department of Health and Environmental Control in Columbia.

"Why shouldn't we apply to a patient exposure the same principles we apply to provider exposures?" asks Ball, who is assistant director of the infectious disease division at the University of South Carolina School of Medicine.

First cases appeared in 1993

The first known cases at North Shore occurred almost 10 years ago, in 1993, when two cardiac surgery patients contracted acute hepatitis C. Their cardiologist notified the hospital in 1994, and the hospital checked its records for a relationship between cardiac surgery and other new cases of hepatitis C.

The hospital did not test the surgical team or cardiac patients, but looked for a history of recent cardiac surgery among acute hepatitis C patients from 1991 to 1997. No other cases were found.

"There was nothing to identify a link between those [two infected] patients and the hospital,

except for the fact that both were patients there," says **Terry Lynam**, spokesman for North Shore hospital.

"We had contacted the CDC at the time to try to determine the best course of action," Lynam says. "They pointed out that there was a myriad of possibilities of how the patients had developed the disease. It was possible it was just a coincidence that they were both at the hospital. They could have contracted it outside the hospital.

"At that time, there had never been a reported transmission of hepatitis C by a health care worker to a patient anywhere in the world," he says.

Meanwhile, the cardiac surgeon continued to operate on thousands of patients without realizing that he was infected with hepatitis C. A specialist in valve replacement, he is noted as a proficient and prolific surgeon who has one of the lowest mortality rates in New York state.

There was no further monitoring or investigation related to HCV transmission until 2001, when one of the surgeon's patients became ill a few months after surgery with acute hepatitis C.

"This was someone who was a regular blood donor and was known to be not infected quite close to the surgery," says **Kristine Smith**, spokeswoman for the New York State Department of Health. "It seemed likely it was a nosocomial infection."

By that time, several cases of health care worker-to-patient transmission had been reported around the world. One case of a cardiovascular surgeon in Spain¹ is now believed to involve injection drug use, as have at least a couple of other cases in which a health care worker self-injected a patient's narcotics and reused needles, Alter says.

In a recently reported case, an anesthesiology assistant in Germany transmitted HCV to five patients from a wound on the finger when he performed procedures without wearing gloves.²

An outbreak in 2001 related to a private endoscopy practice occurred when an anesthesiologist reinserted used needles into multidose vials of fentanyl to provide additional anesthetic during surgery.³ In that case, 12 patients contracted HCV from one chronically infected patient within a three-day period.

Investigators in the North Shore case initially looked at multiuse vials in this current cluster, Smith says.

"They were looking for any potential avenue of transmission," she says. "Eventually, it narrowed down to all of the patients having this one

doctor. The doctor volunteered to be tested in August of last year [2001]."

After the surgeon learned that he was infected with HCV, blood samples from three patients, including one whose infection dated back to 1993, were sent to the CDC. The Sept. 11 attack and the anthrax threat created delays. Then the CDC reported in March that there was a "high degree of relatedness."

Should HCWs with HCV be restricted?

What restrictions are warranted when a health care worker tests positive for HCV?

The CDC addressed this question for HIV and HBV when concerns arose in 1991. The guidelines call for expert review panels to identify "exposure-prone" procedures and to consider applying restrictions in individual cases. As years have gone by with only one subsequent documented case of provider-to-patient transmission of HIV, occupational health experts have concluded that no procedures are "exposure-prone" for HIV.⁴ (See related article, p. 91.)

However, the issue is not as clear for HCV. Hepatitis C has a transmission rate of about 0.5% from occupational exposures — slightly greater than that of HIV and less than that of hepatitis B.^{5,6} The CDC never updated its guidelines to include HCV, and it states simply:

"Currently, no recommendations exist to restrict professional activities of health care workers with HCV infection. As recommended for all health care workers, those who are HCV-positive should follow strict aseptic technique and standard precautions, including appropriate use of hand washing, protective barriers, and care in the use and disposal of needles and other sharp instruments.⁶

In the aftermath of the North Shore outbreak, the New York health officials relied upon their state policy:

"HIV, hepatitis B virus, or hepatitis C virus infection alone does not justify limiting a health care worker's professional duties. Limitations, if any, should be determined on a case-by-case basis after consideration of factors that influence transmission risk including inability or unwillingness to comply with infection control standards or functional impairment which interferes with job performance."

With the additional precautions, informed consent, and follow-up of patients, health officials signed off on the surgeon's continued practice.

"There have been well over 350 surgeries that

Panel: Early treatment of HCV not clear-cut

Many patients clear infection on their own

A National Institute of Health expert panel has concluded that there's not enough evidence to support a recommendation for early treatment of hepatitis C.

A study of 44 patients with acute hepatitis C published last year raised hopes for early treatment when 98% of the patients cleared their infection.¹ However, acute hepatitis C may resolve spontaneously in as many as 45% of cases.²

Because of the significant side effects of the interferon, some HCV experts prefer to wait to see if the infection will resolve on its own.

In a preliminary statement issued on June 12, the NIH Consensus Development Conference on Management of Hepatitis C stated: "Evidence-based proof is needed to determine whom to treat and when to start therapy. Delays in treatment for two to three months seem reasonable to identify cases that spontaneously resolve. Weekly monotherapy with PEG-interferon should be studied."

Occupational health professionals should defer to specialists to determine the best course of treatment when a new case of HCV infection is detected, says **Miriam J. Alter**, PhD, acting associate director for epidemiology and public health in the division of viral hepatitis at the Centers for Disease Control and Prevention in Atlanta.

References

1. Jaeckel E, Cornberg M, Wedemeyer H, et al. Treatment of acute hepatitis C with interferon alfa-2b. *N Engl J Med* 2001; 345:1,452-1,457.

2. Seeff LB. Natural history of chronic hepatitis C. *NIH Consensus Statement: Speaker abstracts*. June 12, 2002. ■

he's performed since that time [that he learned of his infection], and there have been no new transmissions," Lynam notes.

Balancing surgeon's career, patients' health

That is simply not reassuring enough for Jagger. "If this went through the human investigations committee [as a research project], it would never be approved," she says.

"Can you imagine a research proposal to determine whether an HCV-infected surgeon with a

prior history of infecting multiple patients will continue infecting future patients while performing the same exposure-prone procedures?" Lynam asks.

Meanwhile, this case reveals another flaw in the current policy regarding HCV, Jagger says. "The current 'don't ask, don't tell' policy appears to be aimed at not disrupting the surgeon's career," she says. "Although the choices are admittedly difficult, the primary concern must be for the patient's health."

In fact, post-exposure testing, as already mandated by the U.S. Occupational Safety and Health Administration, could benefit both surgeons and patients by allowing them access to effective early treatment, Jagger says.

"We have arrived at a hopeful point in which the discovery of an HCV infection does not necessarily mean a career-ending event for a surgeon," she says. "At this point, it is no longer in the surgeon's best interest not to know his or her HCV status."

Alter and others have noted that transmission of HCV from health care workers to patients is a very rare event. But how rare? Perhaps, the CDC hasn't sufficiently tracked transmission, particularly in light of the fact that HCV infection is often asymptomatic, Ball says. "The absence of evidence is not evidence of absence. The lack of data [about HCV transmission] is not evidence of absence of the event."

Ball says he is optimistic that the new questions raised by the North Shore case will have broader impact.

"I think this case is going to be the driver to compel the CDC to revisit and hopefully include hepatitis C in [its] guidelines," he says.

(Editor's Note: Please take a moment to answer our poll question at your free web site hospitalemployeehealth.com: Should patients be notified whenever there is a potential bloodborne pathogen exposure during surgery?)

References

1. Esteban JI, Gomez J, Martell M, et al. Transmission of hepatitis C virus by a cardiac surgeon. *N Engl J Med* 1996; 334(9):555-560.

2. Cody SH, Nainan OV, Garfein RS, et al. Hepatitis C Virus Transmission From an anesthesiologist to a patient. *Arch Intern Med* 2002; 162:345-350.

3. Alter MJ. Presentation to the Healthcare Infection Control Practices Advisory Committee (HICPAC) meeting. Atlanta; June 18, 2002.

4. Centers for Disease Control and Prevention. Recommendations for preventing transmission of human immunodeficiency virus and hepatitis B virus to patients during exposure-prone invasive procedures. *MMWR* 1991; 40(RR-8):1-9.

5. Campbell SR, Srivastava P, Williams I, Alter M, et al. NaSH Surveillance Group. Hepatitis C virus infection after occupational exposure. *Infect Control Hosp Epidemiol* 2000; 21(2):107.

6. Petrosillo N, Puro V, De Carli G, Ippolito G. Occupational exposure in healthcare workers: An Italian study of occupational risk of HIV and other blood-borne viral infections. *British Journal of Infection Control* 2001; 2(2):15-17.

7. Centers for Disease Control and Prevention. Recommendations for prevention and control of hepatitis C virus (HCV) infection and HCV-related chronic disease. *MMWR* 1998; 47(RR19):1-39. ■

ACOEM: HIV+ employees don't need restrictions

No exposure-prone procedures identified

Health care workers who are HIV-positive should not face restrictions on their practice as no procedures have proven to be "exposure-prone" related to transmission of the virus, the Arlington Heights, IL-based American College of Occupational and Environmental Medicine (ACOEM) stated in a recently released guideline.

"You can look back at 20 years of the epidemic, during a time when there have been many HIV-positive surgeons practicing surgery," says **Mark Russi**, MD, MPH, chair of ACOEM's occupational infectious disease committee. "There has been one case of a surgeon transmitting HIV, if you leave out the cluster [of cases related to] the Florida dentist.

"With no more evidence than [that] of transmission of HIV from health care workers to patients, it's difficult to justify restricting them from carrying out their profession," says Russi, who is associate professor of medicine and public health at the Yale University School of Medicine and director of occupational health at Yale-New Haven (CT) hospital.

Instead, ACOEM recommends that HIV-infected health care workers who perform invasive procedures should double-glove and "minimize to the extent possible digital palpation of needle tips and blind probing in poorly visualized or highly confined anatomic sites."

In a case that is still largely unexplained, six

patients of an HIV-infected Florida dentist acquired the disease in the late 1980s.¹ In 1992, a French orthopedic surgeon transmitted HIV to a patient on whom he had performed a 10-hour surgical procedure.²

Yet as of June 2001, there have been more than 23,000 health care workers with HIV in the United States, according to data from the Centers for Disease Control and Prevention (CDC).

Such a low risk of transmission makes it impossible to identify procedures that are particularly "exposure-prone," as the CDC advised in its HIV guideline released in 1991,³ Russi says.

The CDC said that procedures were exposure-prone if "a needle tip was digitally palpated in a body cavity, or . . . a health care worker's fingers and a needle or other sharp instrument or object are simultaneously present in a poorly visualized or highly confined anatomic site."

However, the agency never issued any further parameters or lists of exposure-prone procedures. ACOEM's position is "within the intent and spirit of the CDC guideline," Russi says. "We have another 10 years of experience, and there's only been one transmission."

ACOEM did note that a greater risk of transmission exists for health care workers who are hepatitis B e-antigen positive. Further, in light of recent reports of transmission of hepatitis C from health care workers to patients, ACOEM will consider a separate position statement on that disease, Russi says. "It's clearly an area that we need to address," he says.

In other HIV-related issues, ACOEM stated:

• **Employees with HIV infection or AIDS qualify for protection under the Americans with Disabilities Act (ADA) and the Family and Medical Leave Act (FMLA).**

Under the ADA, employers must provide reasonable accommodations and are prohibited from discriminating against employees because of their disability. The FMLA provides a 12-month unpaid leave to employees with "serious health conditions" who have at least one year of service.

• **Although ACOEM doesn't support restrictions on HIV-positive health care workers, it noted that courts have not considered such policies to be discriminatory.**

In May, the U.S. Supreme Court declined to hear the appeal of a dental hygienist who sued under the ADA when he was reassigned to a lower-paying clerical position after his employer learned he was HIV-infected. In *Waddell v. Valley Forge Dental Association*, the 11th Circuit Court of

Appeals upheld a dismissal of his case, stating that it did not constitute discrimination because of the potential risk to patients.⁴ (See *Hospital Employee Health*, March 2002, p. 31.)

- **A source patient may harbor resistance to antiretroviral medication, complicating the decision about post-exposure prophylaxis.**

While treatment should begin as quickly as possible, the medication may be adjusted after consultation with infectious disease experts, ACOEM says. Because of possible toxic side effects, those on prophylaxis regimens should be closely monitored.

- **Occupational health physicians should be involved in the development of policies regarding AIDS and HIV in the workplace and should design educational programs.**

References

1. Centers for Disease Control and Prevention. Update: Transmission of HIV infection during an invasive dental procedure — Florida. *MMWR* 1991; 40:21-33.
2. Lot F, Seguiet J-C, Fegueux S, et al. Probable transmission of HIV from an orthopedic surgeon to a patient in France. *Ann Intern Med* 1999; 130:1-6.
3. Centers for Disease Control and Prevention. Recommendations for preventing transmission of human immunodeficiency virus and hepatitis B virus to patients during exposure-prone invasive procedures. *MMWR* 1991; 40 (RR08):1-9.
4. *Waddell v. Valley Forge*, No. 00-14896, 11th U.S. Circuit (Dec. 21, 2001). ■

HIV at work: Precautions needed, not restrictions

In consideration of the minimal additional evidence for transmission of HIV from health care workers to patients in the 10 years since the Centers for Disease Control and Prevention's guidelines were issued, the Arlington Heights, IL-based American College of Occupational and Environmental Medicine (ACOEM) makes the following position statement with regard to the HIV-infected health care worker:

The HIV-infected health care worker should practice standard (universal) precautions at all times. Health care workers who perform invasive procedures should know their own HIV status. HIV-infected health care workers who carry out invasive procedures should double-glove during

all procedures and minimize to the extent possible digital palpation of needle tips and blind probing in poorly visualized or highly confined anatomic sites.

Based on the accumulated evidence, ACOEM does not consider that any invasive medical procedure has distinguished itself as "exposure-prone" with respect to HIV transmission from health care worker to patient. Hence, ACOEM finds no basis to otherwise restrict the practice of health care workers infected with HIV who perform invasive procedures and does not support notification of patients of a health care worker's HIV status unless an exposure has taken place.

ACOEM does not support notification of patients of a health care worker's serological status with respect to HIV unless an exposure has taken place. ■

OSHA to begin citing for reuse of tube holders

Agency states position firmly in clarification

If there was any remaining question about the reuse of blood tube holders, the U.S. Occupational Safety and Health Administration (OSHA) has squelched it with a clarification: "Blood tube holders, with needles attached, must be immediately discarded into an accessible sharps container after the safety feature has been activated."

The reuse of blood tube holders actually has long been prohibited, except when required by a medical procedure.

Such language was included in the preamble to the 1991 bloodborne pathogens standard and in the 1999 updated compliance directive, but OSHA had not previously issued citations related to the practice. The compliance directive issued in 2001 after the bloodborne pathogen standard was revised made it clear that mechanical devices on sharps disposal containers didn't make the practice safe:

"Some sharps containers have unwinders that are used to separate needles from reusable syringes or from reusable blood tube holders," OSHA said. "The use of these are generally prohibited."

This June, OSHA issued a press release and a letter of clarification focusing on the blood tube holder issue.

“Removing contaminated needles and reusing blood tube holders can expose workers to multiple hazards,” OSHA Administrator **John Henshaw** said in the release.

“We want to make it very clear that this practice is prohibited in order to protect workers from being exposed to contaminated needles,” he explained.

Janine Jagger, PhD, MPH, director of the International Health Care Worker Safety Center at the University of Virginia in Charlottesville and a leading expert in needle safety, lauded OSHA’s clarification. While she doesn’t have specific data on needlesticks from the back end of needles, she says she has anecdotal information about their occurrence.

“I think it’s an area that has just been overlooked [by hospitals],” she says. “This just makes it very explicit.”

Until recently, the re-use of blood tube holders has been commonplace. Many hospitals have purchased larger sharps disposal containers to hold the increased bulk as the holders are discarded. OSHA’s latest statement will likely have a positive impact on compliance, says **Katherine West**, MEd, CIC, an infection control consultant based in Manassas, VA.

“Hospitals are beginning to get the word that they are to be single use only,” she says. ■

Lower TB risk prompts comments to OSHA

AHA urges against standard, SEIU cites need

Citing a steep decline in tuberculosis cases nationwide, the American Hospital Association (AHA) urged the Occupational Safety and Health Administration (OSHA) to continue its cooperative, nonregulatory approach to protecting health care workers from exposure to tuberculosis.

Even if future TB cases are fewer than previously estimated, TB remains a serious occupational threat that requires OSHA action, the Service Employees International Union (SEIU) in Washington, DC, told the agency.

The comments were among those received this spring on the draft risk assessment and Institute of Medicine report related to the draft tuberculosis standard. Many arguments about the need for a standard focus on the projected

risk of occupational exposure to TB.

Expert reviewers pointed out weaknesses in OSHA’s draft risk assessment and said it is difficult to determine the actual risk of nosocomial transmission.

“There is sufficient evidence to conclude there is a real risk of occupational TB infection, so OSHA and other regulatory agencies have a duty to act,” **Richard Menzies**, MD, director of the respiratory epidemiology unit at McGill University in Montreal wrote in a review that was opened for comment this spring. “However, the agencies also have a duty to acknowledge the limitations of the current evidence, in order to encourage further investigation where it is most needed, and to allow for future revision when new evidence is available.” (See *Hospital Employee Health*, March 2002, p. 25.)

That mixed message was mirrored in a National Academy of Sciences/Institute of Medicine (NAS/IOM) report, *Tuberculosis in the Workplace*, which was released in January 2001. (See *HEH*, March 2001, p. 31.) While the IOM panel endorsed the concept of a TB standard to set minimum protections for health care workers, the experts said the proposed standard fails to provide enough flexibility to hospitals at low-risk and relies on outdated and flawed estimates of the tuberculosis threat.

In his comments, AHA executive vice president **Richard Pollack** cited the efforts of hospitals to comply with TB guidelines from the Centers for Disease Control and Prevention (CDC) in Atlanta. (The CDC currently is preparing an update of those guidelines.)

“Proposed OSHA requirements that go beyond these [CDC] recommendations would place an additional and unneeded burden on all hospitals,” Pollack said.

Meanwhile, OSHA overestimated the occupational exposure and underestimated the community exposure of health care workers, he said.

“Given the current declining rates of TB disease, the lack of transmission in health care facilities, the current extent to which TB guidelines have been implemented in hospitals, and the inability to totally prevent TB exposure, the AHA questions whether the issuance of a final OSHA TB standard is justified,” he said.

Yet the lower risk is still an unacceptable risk, argued the SEIU. “Even with the reduction in estimated cases, the risk of tuberculosis infection clearly meets the legal definition of what would constitute a ‘material impairment of health,’”

the union contended, citing Menzies' comments.

"In such cases, OSHA is legally bound under the Occupational Safety and Health Act of 1970 to act to assure that 'no employee will suffer material impairment to their health,'" the union said.

The SEIU also wryly noted the resources currently being devoted to protect health care workers and others from a potential smallpox attack: "While it is important to protect these workers from the potential threat posed by smallpox, where is our government's commensurate response to protect some of these very same workers from the very real and existing threat posed by tuberculosis?" ■

Literature Review

Hepatitis B transmission from surgeon to patients

- Spijkerman IJB, van Doorn LJ, Janssen MHW, et al. **Transmission of hepatitis B virus from a surgeon to his patients during high-risk and low-risk surgical procedures during four years.** *Infect Control Hosp Epidemiol* 2002; 23:306-312.

- Chiarello LA and Cardo DM. **Preventing transmission of hepatitis B virus from surgeons to patients.** *Infect Control Hosp Epidemiol* 2002; 23:301-302.

- **More should be done to protect surgical patients from intraoperative hepatitis B infection.** *Infect Control Hosp Epidemiol* 2002; 23:303-304.

Transmission of hepatitis B from a surgeon to patients can remain undetected for many years and may occur even in procedures that have not been considered exposure-prone, the authors concluded after a retrospective study of cases linked to an HBV-infected surgeon.

In the cases described, a general surgeon in The Netherlands was a known nonresponder to the HBV vaccine. He reported numerous percutaneous injuries over the years.

A test of stored serum indicated that he was infected with hepatitis B for at least 10 years without being aware of it. The infection came to light when three surgical patients in 1998 and 1999 reported acute HBV infections.

Those infections prompted a widespread testing

CE questions

5. In its smallpox vaccination advisory, the Advisory Committee on Immunization Practices recommended:
 - A. vaccination of all health care personnel
 - B. vaccination offered to the general public
 - C. vaccination of health care personnel after cases are diagnosed
 - D. vaccination of limited health care personnel at designated hospitals
6. In the hepatitis C cluster at North Shore University Hospital in Manhasset, what restrictions were placed on the surgeon who transmitted the infection?
 - A. The surgeon was prohibited from further practice at the hospital.
 - B. The surgeon ceased performing certain exposure-prone procedures.
 - C. The surgeon supervised procedures at the hospital.
 - D. The surgeon continued to practice with additional precautions.
7. According to guidelines by the American College of Occupational and Environmental Medicine, the lack of a documented transmission of HIV from providers to patients since 1992 indicate that:
 - A. Restrictions in practice aren't warranted for HIV-infected surgeons.
 - B. HIV-infected surgeons have left the profession.
 - C. More surgeons need to be tested for HIV.
 - D. Few health care workers are infected with HIV.
8. In a study of 28 cases of hepatitis B that were linked to a general surgeon in The Netherlands, what did the authors of an article in *Infection Control and Hospital Epidemiology* conclude about exposure-prone procedures?
 - A. There are no exposure-prone procedures.
 - B. Expert panels work well to identify exposure-prone procedures.
 - C. The virus was transmitted even in procedures that are not considered exposure-prone.
 - D. There is no evidence of provider-to-patient transmission as it relates to exposure-prone procedures.

Answers: 1. D; 2. D; 3. A; 4. C

of the surgeon's patients. Of the 1,594 patients tested, 28 had HBV infections that may be linked to the surgeon. In eight cases, DNA sequence analysis confirmed that the surgeon was the source of infection. (In one case, the patient's wife developed severe acute hepatitis B through secondary transmission; DNA sequencing was identical to that of the surgeon. The husband, who apparently resolved his infection, tested negative.)

Another two cases were considered probable because patients exhibited signs of acute hepatitis within six months of surgery but then tested negative for HBV antibody. Eighteen cases were considered possible because the patients had no other risk factors for HBV other than the procedure performed by the HBV-infected surgeon. The surgeries occurred between June 1995 and February 1999.

The transmission rate, based on confirmed, probable, and possible cases, was 1.8%.

An analysis of the surgeries raises several issues related to the potential for transmission of HBV from health care workers to patients. Past policies have focused on "exposure-prone" procedures as presenting a risk to patients.

Risk factors for HBV

The authors found that duration of surgery and complications during or after surgery were risk factors for HBV transmission. The risk of HBV infection was seven times greater during high-risk procedures compared with low- or medium-risk procedures, they found.

But eight of the 28 infected patients had undergone low-risk procedures, such as ligation and stripping of varicose veins. "In our study, the proportions infected for low-risk and medium-risk operations were similar, and transmission during these procedures contributed substantially to the total number of infected patients," the authors state.

Guidelines that differentiate between "exposure-prone" and "nonexposure-prone" procedures should be reconsidered, they assert. "Given the difficulty of classifying surgical procedures and the apparent risk associated with low-risk procedures, this policy should be seriously questioned, especially regarding surgeons who have already transmitted HBV to patients," they state.

The authors raise another question: What should be done about known nonresponders to the HBV vaccine?

They suggest that "a more stringent policy of

vaccination and testing of surgeons could prevent similar outbreaks," including regular testing of nonresponders for HBV markers. Furthermore, they advocate better surveillance of acute HBV infections, which may have led to earlier identification of the transmission.

The testing and possible restriction of practice of health care workers infected with HIV, HBV, or hepatitis C remains controversial. Two editorials accompanying the article give contrary views of how to reduce the risk of transmission.

One by **Linda Chiarello** and **Denise Cardo** of the Division of Healthcare Quality Promotion at the Centers for Disease Control and Prevention in Atlanta emphasizes the use of safe work practices, such as hands-free passing of instruments in the operating room and double-gloving during invasive surgical and obstetric procedures.

"Healthcare providers who perform surgical

Hospital Employee Health® (ISSN 0744-6470) is published monthly by American Health Consultants®, 3525 Piedmont Road, Building Six, Suite 400, Atlanta, GA 30305. Telephone: (404) 262-7436. Periodicals postage paid at Atlanta, GA 30304. POSTMASTER: Send address changes to **Hospital Employee Health**®, P.O. Box 740059, Atlanta, GA 30374.

Subscriber Information

Customer Service: (800) 688-2421 or fax (800) 284-3291. Hours of operation: 8:30 a.m.-6 p.m. Monday-Thursday, 8:30 a.m.-4:30 p.m. Friday EST. E-mail: customerservice@ahcpub.com. World Wide Web: www.ahcpub.com.

Subscription rates: U.S.A., one year (12 issues), \$429. Outside U.S., add \$30 per year, total prepaid in U.S. funds. Two to nine additional copies, \$343 per year; 10 to 20 additional copies, \$257 per year. For more than 20 copies, contact customer service for special handling. Missing issues will be fulfilled by customer service free of charge when contacted within 1 month of the missing issue date. **Back issues**, when available, are \$72 each. (GST registration number R128870672.)

Photocopying: No part of this newsletter may be reproduced in any form or incorporated into any information retrieval system without the written permission of the copyright owner. For reprint permission, please contact American Health Consultants®, Address: P.O. Box 740056, Atlanta, GA 30374. Telephone: (800) 688-2421.

This continuing education offering is sponsored by American Health Consultants®, which is accredited as a provider of continuing education in nursing by the American Nurses Credentialing Center's Commission on Accreditation. Provider approved by the California Board of Registered Nursing, provider number CEP 10864.

Opinions expressed are not necessarily those of this publication. Mention of products or services does not constitute endorsement. Clinical, legal, tax, and other comments are offered for general guidance only; professional counsel should be sought for specific situations.

Editor: **Michele Marill**, (404) 636-6021, (marill@mindspring.com).

Vice President/Group Publisher: **Brenda Mooney**, (404) 262-5403,

(brenda.mooney@ahcpub.com).

Editorial Group Head: **Coles McKagen**, (404) 262-5420,

(coles.mckagen@ahcpub.com).

Senior Production Editor: **Ann Duncan**.

Copyright © 2002 by American Health Consultants®. **Hospital Employee Health**® is a trademark of American Health Consultants®. The trademark **Hospital Employee Health**® is used herein under license. All rights reserved.

Editorial Questions

For questions or comments call **Michele Marill** at (404) 636-6021.

THOMSON
AMERICAN HEALTH
CONSULTANTS

and gynecologic procedures also have a responsibility to know their bloodborne virus serostatus and, if possible, to seek advice from an expert consultant regarding patient safety. The surgeon in this report was a nonresponder to hepatitis B vaccine and should have been tested for hepatitis B surface antigen following that determination," Chiarello and Cardo state.

Yet Shirley Paton, Shimian Zou, and Antonio Giulivi of the Health-Care Acquired Division of the Centre for Infectious Disease Prevention and Control in Ottawa, Canada, advocate more stringent measures, including more active surveillance, tracking of nonresponders, and possible practice restrictions.

"On the basis of Spijkerman et al. and previous work done in this area, invasive surgery or other procedures performed by HBeAg-positive HCWs may pose an unacceptable risk to patients that may not be reducible by minor practice changes or enhanced infection control activities," they state. ■



- **Association of Professionals in Infection Control — Virginia** — Sept. 18-20, Fairfax, VA. "Focus on the future: Where do we go from here?" Annual educational conference highlighting emerging trends in infection control and new regulatory standards. Contact Dorothy Seibert, Fauquier Hospital, 500 Hospital Drive, Warrenton, VA 20186. Telephone: (540) 341-0826. Fax: (540) 349-5506. E-mail: seibertd@fauquierhospital.org.

- **Association of Occupational Health Professionals in Healthcare** — Oct. 17-19, St. Louis. "Meet me in St. Louis: Unlock the Gateway to Success," annual conference highlighting occupational health success stories. For more information, contact AOHP, 500 Commonwealth Drive, Warrendale, PA 15086. Telephone: (800) 362-4347. Fax: (724) 772-8349. Web site: www.aohp.org/aohp/. ■

Newsletter binder full?
Call 1-800-688-2421
for a complimentary replacement.

EDITORIAL ADVISORY BOARD

Kay Ball, RN, MSA, CNOR, FAAN
 Perioperative Consultant/
 Educator, K&D Medical
 Lewis Center, OH

Cynthia Fine, RN, MSN, CIC
 Infection Control/
 Employee Health
 John Muir Medical Center
 Walnut Creek, CA

Guy Fragala, PhD, PE, CSP
 Director
 Environmental Health and Safety
 University of Massachusetts
 Medical Center, Worcester

Charlene M. Gliniecki,
 RN, MS, COHN-S
 Director
 Employee Health and Safety
 El Camino Hospital
 Mountainview, CA
 Assistant Clinical Professor
 University of California
 San Francisco

June Fisher, MD
 Director
 Training for Development of
 Innovative Control Technology
 The Trauma Foundation
 San Francisco General Hospital

Mary Ann Gruden, MSN, CRNP,
 NP-C, COHN-S/CM
 Executive President
 Association of Occupational
 Health Professionals
 in Healthcare
 Reston, VA
 Manager
 Employee Health Services
 West Penn Allegheny
 Health System
 Western Pennsylvania Hospital,
 Pittsburgh

Janine Jagger, PhD, MPH
 Director, International Health
 Care Worker Safety Center
 Becton Dickinson Professor of
 Health Care Worker Safety
 University of Virginia
 Health Sciences Center,
 Charlottesville

Geoff Kelafant
 MD, MSPH, FACOEM
 Medical Director,
 Occupational Health Department
 Sarah Bush Lincoln
 Health Center, Mattoon, IL
 Chairman
 Medical Center
 Occupational Health Section
 American College of
 Occupational and Environmental
 Medicine
 Arlington Heights, IL

Gabor Lantos, MD, PEng, MBA
 President, Occupational Health
 Management Services
 Toronto

JoAnn Shea, MSN, ARNP
 Director,
 Employee Health & Wellness
 Tampa (FL) General Hospital

Kathleen VanDoren
 RN, BSN, COHN-S
 Former Executive President
 Association of Occupational
 Health Professionals
 in Healthcare
 Reston, VA

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. ■