carded in these containers (Table). Almost 2,000 other types of objects (eg, medication vials, glass ampules, scissors, hemostats, sutures, and scalpels) also were discarded. There were approximately 3,800 patient visits to the Emergency Department during the study period, with approximately 230 devices of all types used per day and 2.3 devices used per patient visit.

We found that needle recapping was common, occurring with 10.6% to 72.2% of the needled devices (Table). This likely was an underestimate of actual recapping, as some needle caps came off needles as the container contents were shaken onto the sorting table. On the other hand, some of the capped needles likely had been used to draw up medications, a circumstance in which recapping to change needles is an accepted practice. Some of the other capped needled devices undoubtedly were discarded prior to use. Finally, the proportion of needles that were capped to maintain sterility prior to use was not known.

Following publication of the McCormick and Maki study in 1981,[1] HCWs repeatedly were admonished not to recap used needles, but were frustrated by the lack of appropriate containers at points of use. The HCW often was faced with the dilemma of how to transport a syringe with an uncapped used needle to a disposal container far from the bedside. Recapping in this situation often was viewed as a safer alternative than walking down the hall with an exposed sharp. The two-handed recapping method also was taught routinely in nursing and medical schools, at least until the mid-1980s.

Sharps disposal containers near individual patient beds did not become common until the latter part of the 1980s. A few years later, Jagger and colleagues[4] and Wugofski[5] questioned whether "not recapping" was placing appropriate emphasis, and identified a number of competing priorities when the decision to recap or not to recap was presented to the HCW.

This study has enumerated the many different types of needles and sharps used in a large urban medical center's emergency department over a 38-day period and that over one third of the needles were recapped in some manner prior to disposal. The proportion of appropriate recapping or the methods used is unknown.

This study presents a realistic view of the many different types of devices disposed of daily in a busy emergency department, and the myriad of different devices for which safety designs or work practice modifications are needed if risks for needlestick injuries are going to be reduced. We certainly agree with Jagger et al[4] and with Wugofski[5] that not recapping used needles is much too simple a solution to a very complex problem.

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Educational Needs and Opportunities for the Hospital Epidemiologist

To the Editor:

A number of excellent educational programs are described in the March issue.[1] Additional courses and resources may be found in an annual *Directory of Education,* published in December issues of *Infection Control & Sterilization Technology* (Mayworm Associates, Inc, Libertyville, IL). However, such programs all suffer one well-recognized limitation: the cost of travel, accommodation, and, in the extreme case, temporary relocation, to participate. Conversely, distance-education allows participants to study at times and locations of their own preference. Unfortunately, few distance-education programs related to hospital epidemiology and infection control are available today. The Centers for Disease Control and Prevention (CDC) Distance Learning Program offers a few short courses for which certificates of completion are provided. The possibility of distance-education undergraduate and graduate degree programs for our field has been considered here at the University of British Columbia, and, in partnership with the British Columbia Institute of Technology, one 5-unit undergraduate course has been created. British Columbia Institute of Technology offers ENVH5266 (Advanced Epidemiology and Biostatistics) for an intended audience of public health inspectors and practitioners of hospital infection control or quality assurance and improvement. ENVH5266 provides instruction in methods of epidemiologic investigation, critical appraisal, outbreak investigation (CDC's "Pharyngitis in Louisiana" computer simulation is used as an exercise), and research design. Further information about ENVH5266 may be obtained from British Columbia Institute of Technology, Health Part Time Studies, 3700 Willingdon Ave, Burnaby, BC V5G 3H2, Canada.

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The authors reply

We thank Dr. Birnbaum for his input and course suggestion, as well as his additional references. While researching our article,[1] we limited ourselves mostly to traditional training opportunities in hospital epidemiology and infection control available in the United States. Our suggestions are by no means all inclusive. Finding training opportunities to meet an individual's needs and resources may require a fair amount of research. Our article offers some suggestions of where one should begin, and Dr. Birnbaum has suggested another

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resource to assist in the search.

The training opportunities discussed in the article can be costly in terms of time and money. Training programs using computer technology are one way to deal with this limitation. Although not yet widely available, interactive computer training is being developed and marketed in many disciplines. We expect that the quality and variety of such programs will continue to increase and will provide interesting and valuable alternatives to the traditional methods of classroom training.

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1. Dembry LM, Hierholzer WJ Jr. Educational needs and opportunities for the hospital epidemiologist. *Infect Control Hosp Epidemiol* 1996;17:188-192.

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Correction

Understaffing: A Risk Factor for Infection in the Era of Downsizing?

It has been brought to our attention that a word was changed inappropriately in the editorial "Understaffing: A Risk Factor for Infection in the Era of Downsizing" (1996;17:147-149). On page 148, column 2, paragraph 1, the second sentence should read "Further studies of the effects of povidone-iodine ointment and of gauze versus transparent dressings will be needed to confirm their utility."

CDC Restricts Transfer of Biohazards

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Medical News Editors

The CDC has proposed new rules that would impose additional requirements on facilities that ship or receive infectious agents capable of causing substantial harm to human health. Of special concern are those agents that cause anthrax, botulism, brucellosis, plague, tularemia, and all agents classified at a Biosafety Level 4.

These facilities include laboratories operated by governmental agencies, universities, research institutions, and commercial entities. Congress recently was alerted to the issue of potential harmful agents falling into the hands of those who might use them to inflict harm after news reports about an individual in Ohio who successfully ordered bubonic plague from a commercial company in Maryland that sells stocks of cultures to academia and industry. In other cases reported by the press, private individuals were able to obtain the ingredients needed to manufacture sarin gas, the substance that killed 12 people in a terrorist attack in a Japan subway in 1995.

The proposed rule stipulates that facilities that wish to handle these biologic agents must register with the CDC to ensure that the facility meets appropriate biosafety level requirements for handling the agents. The new rules also call for a standardized transfer form for tracking in case of wrongful transfer; written verification from the facility of receipt of the infectious agent; and a signed statement promising that the agents will be stored properly, destroyed after completion of work, or transferred to an approved repository.

Clinical specimens transferred for diagnosis and verification would be exempt from the rules, as would dilute solutions of toxins for medical use and vaccine strains of restricted viral agents.

FROM: Centers for Disease Control and Prevention. Requirements for facilities transferring or receiving infectious agents. *Federal Register* June 10, 1996;61(112):29327-29333.

Rovner J. US to restrict transfer of biohazards. *Lancet* 1996;347:1759.

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