Medical News

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Infection Surveillance and Control Programs: United States, 1992-1996

Nguyen and coinvestigators, from CDC's Hospital Infections Program, and the Association for Professionals in Infection Control and Epidemiology, Inc (APIC), recently published a study describing US infection surveillance and control programs (ISCPs), updating previous studies from the 1970s. In January 1997 a voluntary survey was mailed to APIC members. Only one response per facility was requested. The survey asked for information from the years 1992 to 1996 (study period), and questions pertained to characteristics of the healthcare facility in which the respondent worked, characteristics of the ISCP and its personnel, and the overall level of administration support for infection control activities.

Completed questionnaires were received from 187 healthcare facilities in 40 states and the District of Columbia. The majority (76.5%) of responding facilities were nongovernment owned, and 57.2% were classified as general acute-care facilities. The number of licensed beds at these facilities remained stable throughout the study period, but all other measures of facility size and activity (eg, number of patient days and number of nurses) decreased by as much as 29%. In 1992, ISCPs were most likely to be organizationally located in the nursing department, but by 1996, many had been transferred to departments of medical records, quality assurance, or risk management. Throughout the study period, the number of facilities performing surveillance for healthcare-associated infections in outpatient settings increased by 44.0%, from 100 to 144.

In 1996, only 47.6% of facilities had a hospital epidemiologist (HE), and HEs devoted a median of ≤15% of their time to infection control activities. HEs often were trained in infectious diseases, but few were certified in infection control. Infection control professionals (ICPs) were much more common than were HEs (ICPs were reported at 97.9% of respondents' facilities in 1996), and they spent the majority (80% in 1996) of their time on infection control activities. During the study period, increasing numbers of facilities had ICPs who had certification in infection control. Furthermore, most respondents did not report a change over time in the level of administration support for infection control activities.

Several changing parameters, such as departmental shifts and increased outpatient surveillance, reflect adjustments in healthcare priorities during the study period. As the transformation of the healthcare system continues, continued evaluation of the status of ISCPs on a national level will be necessary. Diligent monitoring, proactive measures, and collaboration between infection control organizations and government agencies will be vital for the prevention and control of healthcare-associated infections in the future.

FROM: Nguyen GT, Proctor SE, Sinkowitz-Cochran RL, Garrett DO, Jarvis WR. Status of infection surveillance and control programs in the United States, 1992-1996. *Am J Infect Control* 2000;28:392-400.

Transmission of HCV From Anesthesiology Assistant to Five Patients

Dr. Ross, from the Institute of Virology, Essen, Germany, and colleagues have reported an outbreak of hepatitis C virus (HCV) in a municipal hospital. Their findings suggest that an anesthesiology assistant contracted HCV from a chronically infected patient and subsequently transmitted the virus to five other patients (four of which are included in this report).

Between July 1 and October 13, 1998, HCV infection was diagnosed in four patients (patients 2, 3, 4, and 6 in this report) who had undergone surgery in the same hospital 6 to 18 weeks earlier. Six patients were found to have hepatitis C viremia. The HCV infection of patient 1 was first diagnosed in 1996. She probably contracted the virus through a contaminated blood transfusion or clotting-factor concentrates during heart-valve replacement in 1980. Patients 2, 3, and 6 had acute icteric hepatitis C 6 to 18 weeks after surgery, whereas patients 4 and 5 were asymptomatic after surgery. Only patient 1 had ever received blood or blood products.

All six patients and the anesthesiology assistant were positive for serum HCV antibodies and HCV RNA. At the time of the investigation, patient 1 and the assistant had high plasma levels of HCV RNA (2.6×10^7 copies of HCV RNA/mL and at least 1×10^6 copies of HCV RNA/mL, respectively). Genotyping revealed HCV type 1a infection in all cases.

The anesthesiology assistant, who participated in all four operations, was almost entirely responsible for the administration of general anesthesia, including preparation of narcotic drugs, placement of venous and arterial catheters, intubation of the patients, and the subsequent artificial respiration. He usually did not wear gloves, claiming they diminished his sense of touch and therefore impaired his work. He

reported that, during the time under investigation, he had a thumbnail-sized wound on the medial side of the third finger of his right hand, sustained in mid-April 1998. He used a bandage for 3 or 4 days, but not thereafter, although the wound was still weeping. The assistant admitted to negligent behavior, but at the time he considered the open wound to be an old injury and was not aware that such an attitude might be risky for him and his patients. Between April 28, 1998, the day of surgery in patient 1, and June 9, 1998, the day of surgery in patient 6, the assistant participated in 39 operations. Between the time he went on sick leave because of acute hepatitis C and July 1998, another 118 operations were performed in the hospital; no further HCV infections occurred.

Numerous breaches of general infection control practices had taken place. For instance, needles were frequently recapped after use, and gloves were not always worn in settings in which exposure was likely. Multidose vials for flushing solutions, saline, local anesthetic drugs, and heparin were often used in the operating rooms, although the solutions were changed every second day. As a disinfectant for surfaces, the hospital used a product based on a peroxide compound (Dismozon pur, Bode Chemie, Hamburg, Germany) not recommended for areas grossly contaminated with blood.

This report provides evidence that a nonsurgical staff member infected with HCV transmitted the virus to at least five patients. The precise mechanisms leading to infection could not be determined. The only identifiable condition that might have caused the spread of the virus was the wound on the assistant's hand. Given the high plasma levels of HCV RNA in both patient 1 and the assistant, and given that the assistant usually did not wear gloves in the operating room, it is possible that a fraction of a microliter of blood or wound secretions might have transmitted HCV from patient 1 to the assistant and subsequently from him to the five other patients.

FROM: Ross RS, Viazov S, Gross T, Hofmann F, Seip HM, Roggendorf M. Transmission of hepatitis C virus from a patient to an anesthesiology assistant to five patients. *N Engl J Med* 2000;343:1851-1854.

Psychiatric Inpatients at Risk for HIV, TB, and Hepatitis

In a study of 655 men and women admitted to a psychiatric hospital between 1997 and 1999, the patients were 4.5 times as likely to have hepatitis B and 11.9 times as likely to have hepatitis C as those in the general public. The risk seems to be increasing. In 1997 they found that 19.9% of the cohort was infected with hepatitis C; by 1999 this figure rose to 28.4%. The researchers also found that 20.2% of patients tested positive for TB, which is four times the estimated rate in the general US population; the rate of HIV infection among the psychiatric patients was 2.8%, nine times that seen in the general population. "It was interesting that these patients, who are directly involved in the medical system, have very poor medical care—and less than 20% have regular medical doctors that they see," lead investigator Dr. W.F. Pirl, Harvard University, Boston, Massachusetts, said. He presented the findings at the annual meeting of the Academy of Psychosomatic Medicine, in Palm Springs, California.

Dr. Pirl told Reuters Health he was surprised by the high infection rates in the psychiatric inpatients. "I think prevention efforts need to give more attention to substance abuse treatment," he said, adding that psychiatric inpatients are often not tested for these diseases. "Some of the things you would think would make people be tested—such as a history of drug abuse—were not indicative of whether or not they had been tested. So, in general, we need to find better ways to integrate medical doctors into the care of chronic psychiatric patients," he concluded. "All of them have some medical issues, and it would be nice to develop a system where preventative healthcare was part of mental health systems instead of being separate."

FROM: ICAN News. Nov 21, 2000.

Rubella Outbreak: From Workplace to Community

The largest outbreak of rubella in the past 5 years occurred in Nebraska in 1999. To examine risk factors for disease, susceptibility of the risk population, role of vaccine failure, and the need for new vaccination strategies, a detailed investigation was conducted of the 83 confirmed rubella cases occurring in Douglas County, Nebraska, between March 23 and August 24, 1999. Case characteristics, compared with that of the general county population; area childhood rubella vaccination rates; and susceptibility among pregnant women before versus during and after the outbreak were the main outcomes measured.

All 83 rubella cases were unvaccinated or had unknown vaccination status and fell into three groups: (1) Fifty-two (63%) were young adults (median age, 26 years), 83% of whom were born in Latin American countries where rubella vaccination was not routine. They were either employed in meat-packing plants or were their household contacts. Attack rates in the plants were high (14.4/1,000 vs 0.19/1,000 for general county population). (2) Sixteen (19%), including 14 children (9 of whom were aged <12 months) and two parents, were US-born and non-Hispanic, who acquired the disease through contacts at two day-care facilities (attack rate, 88.1/1,000). (3) Fifteen (18%) were young adults (median age, 22 years) whose major disease risk was residence in population-dense census tracts where meat-packing–related cases resided ($R2=0.343$; $P<.001$); 87% were born in Latin America. Among pregnant women, susceptibility rates were 13% before the outbreak and 11% during and after the outbreak. Six (25%) of 24 susceptible women tested were seropositive for rubella IgM. Rubella vaccination rates were 90.2% for preschool children and 99.8% for school-aged children.

A large rubella outbreak occurred among unvaccinated persons in a community with high immunity levels. Crowded working and living conditions facilitated transmission, but vaccine failure did not. Workplace vaccination could be considered to prevent similar outbreaks.

FROM: Danovaro-Holliday MC, LeBaron CW, Allensworth C, Raymond R, Borden G, Murray AB, et al. A