

Medical News

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Progress of US Hospitals in Implementing TB Control Programs

The CDC reported the results of two surveys of US hospitals conducted in 1992 and 1996 to determine the degree of implementation of the "CDC Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* at US Hospitals." The 1992 survey included all public (city, county, Veterans' Administration), and primary medical school-affiliated US hospitals (n=632) and a 20% random sample of all private hospitals (n=444 with ≥ 100 beds. In 1996, a 50% random sample of (n=136) of all 1992 respondent hospitals with >6 TB admissions were resurveyed.

Of the 1,076 hospitals surveyed in 1992, 763 (71%) of respondents returned a completed questionnaire. Among these, 536 (71%) of 755 reported having isolation rooms that met the CDC criteria for acid-fast bacilli (AFB) isolation rooms, ie, negative pressure, >6 air exchanges per hour, and air directly vented to the outside. The number of AFB isolation rooms that met the CDC criteria ranged from 0 to >60 (median, 7). The predominant form of respiratory protection was a nonfitted surgical mask. Almost all (747 [99%] of 758) respondents had some form of skin testing screening for healthcare workers.

In the 1996 resurvey, 103 (75%) of 136 respondents returned a completed questionnaire. Of these, 99 (86%) of 103 reported having rooms that met the CDC criteria for AFB isolation, and the number of such rooms ranged from 0 to 74 (median, 12). Most (84 [82%] of 103) respondents had N95 respiratory protective devices for healthcare workers. In 1996, all respondents had tuberculin skin testing (TST) programs; however, only 30 (29%) of 103 could provide TST data for 1992 to 1996.

The authors concluded that US hospitals are making significant progress in the implementation of specific recommendations for preventing transmission of *M tuberculosis*. However, management of TST data remains a challenge for hospital personnel, and continued improvement is needed to implement the CDC's TB guidelines fully.

FROM: Manangan LP, Pugliese G, Rudnick JR, Banerjee SN, Kroc K, Steingraber K, et al. Are US hospitals making significant progress in implementing guidelines for prevention of *Mycobacterium tuberculosis* transmission? Presented at the 35th Annual Meeting of the Infectious Diseases Society of America; September 13-16, 1997; San Francisco, CA. Abstract no. 331.

Free Videotape of Satellite Conference on VRE

On September 25, 1997, the CDC broadcasted a video-

conference on vancomycin-resistant enterococci, covering aspects of detection, risks, epidemiology, treatment, and control. The videotape is available free of charge.

To obtain a single copy, fax or mail a request with your name, institution or affiliation, mailing address (including zip code), telephone number, fax, e-mail address to Ronda L. Sinkowitz-Cochran, VRE Videoconference Project Lead, Hospital Infections Program/NCID, CDC, 1600 Clifton Rd, Mail Stop E-69, Atlanta, GA, 30333, or fax 404-639-6459.

Postdischarge Surgical-Site Surveillance

Most surgical-site infections (SSIs) occur after hospital discharge, and there is no satisfactory method to identify them. Researchers from the Brigham and Women's Hospital and Harvard Pilgrim Health Care, Boston Massachusetts, recently assessed the utility of automated claims and electronic medical-record data for identifying SSIs.

The researchers followed 4,086 consecutive nonobstetrical surgical procedures, among which 96 postdischarge SSIs occurred. This data set was divided into training and test sets. Recursive partitioning was used to identify important combinations of coded diagnoses, tests, and treatments.

The sensitivity and specificity of the models varied, depending on the relative importance assigned to correctly identifying SSIs and non-SSIs. The model with sensitivity and specificity >90% identified SSIs based on combinations of surgery types, infection diagnosis codes at ambulatory visit or admission visit or hospital readmission, prescribing or dispensing of antistaphylococcal antibiotic, and the obtaining of a wound culture. All of these models performed much better than a questionnaire response from patients and surgeons.

The authors concluded that automated information routinely collected by healthcare systems can be the basis of an efficient surveillance system for postdischarge SSIs.

FROM: Sands K, Christiansen C, Livingston J, Platt R. Efficient identification of post-discharge surgical site infections from automated data sources. Presented at the 35th Annual Meeting of the Infectious Diseases Society of America; September 13-16, 1997; San Francisco, CA. Abstract no. 43.

Shielded Pulmonary Artery Catheter Reduces Infection Risk

French scientists have reported the results of a prospective study on the effect of a new shielded thermodi-

lution pulmonary artery (STPA) catheter in reducing risk of systemic infections associated with pulmonary artery catheterization. The shielded catheter is covered completely during balloon testing, preparation, and insertion.

To assess the value of this STPA catheter in the prevention of systemic infections associated with pulmonary artery catheterization, they conducted a randomized, prospective study over an 18-month period. The patients were randomly assigned to two groups, of which one received a standard pulmonary artery catheter and the other, the STPA catheter. The diagnosis of systemic infection was based on recovery of the same organism from the thermodilution catheter (TC) and from blood samples; absence of any other infectious focus; and improvement or resolution of clinical evidence of infection after removal of the TC. A total of 166 TCs were randomized in 150 patients.

Eight cases of systemic infection were diagnosed in the standard TC group, versus none in the STPA catheter group ($P < .002$). No cases of systemic infections occurred in those patients who had their TC for less than 4 days. A shielded pulmonary artery catheter may reduce the risk of systemic infections associated with prolonged pulmonary artery catheterization.

FROM: Cohen Y, Fosse JP, Karoubi P, Reboul-Marty J, Dreyfuss D, Hoang P, et al. The "hands-off" catheter and the prevention of systemic infections associated with pulmonary artery catheter: a prospective study. *Am J Respir Crit Care Med* 1998;157(1):284-287.

Infectious Complications Associated with Histamine₂-Receptor Antagonists

Investigators from the Department of Surgery, University of Washington, and Harborview Medical Center in Seattle conducted a study to determine the impact of histamine₂ (H₂)-receptor antagonist use on the occurrence of infectious complications in severely injured patients. Some previous studies suggest an increased risk of nosocomial pneumonia associated with the use of H₂-receptor blockade in critically ill patients, but other investigations suggest an immune-enhancing effect of H₂-receptor antagonists. The purpose of this study was to determine whether H₂-receptor antagonist use affects the overall incidence of infectious complications.

Patients enrolled in a randomized trial comparing ranitidine with sucralfate for gastritis prophylaxis were examined for all infectious complications during their hospitalization. Data on the occurrence of pneumonia were collected prospectively, and other infectious complications were obtained retrospectively from the medical record.

The relative risk of infectious complications associated with ranitidine use and total infectious complications were analyzed. Of patients whose 96 charts were available for review, sucralfate was given to 47, and 49 received ranitidine. Ranitidine use was associated with a 1.5-fold increased risk of developing any infectious complication (37/47 vs 26/47). Infectious complications totaled 128 in the ranitidine-treated group and 50 in the sucralfate-treated

group ($P = .0014$). These differences remained after excluding catheter-related infections ($P = .0042$) and secondary bacteremia ($P = .0046$). The authors concluded that ranitidine use in severely injured patients is associated with a statistically significant increase in overall infectious complications when compared with sucralfate. These results indicate that ranitidine should be avoided where possible in the prophylaxis of stress gastritis.

FROM: O'Keefe GE, Gentilello LM, Maier RV. Incidence of infectious complications associated with the use of histamine₂-receptor antagonists in critically ill trauma patients. *Ann Surg* 1998;227:120-125.

Dialysis-Associated Diseases in the United States

The CDC's Hospital Infections Program and Hepatitis Branch have been conducting surveillance of dialysis-associated diseases in hemodialysis centers since the 1980s. Results of a 1995 survey on hemodialysis-associated disease and infection control practices in chronic hemodialysis centers in the United States were published recently.

A total of 2,647 centers responded, representing 224,954 patients and 54,194 staff members. Seventy-seven percent of centers reported that they reused disposable dialyzers. At the end of 1995, 65% of patients were treated with an arteriovenous graft, 22% with an arteriovenous fistula, and 13% with a temporary or permanent central catheter. By the end of 1995, at least three doses of hepatitis B vaccine had been administered to 35% of patients and to 82% of staff members.

Acute infection with the hepatitis B virus (HBV) occurred in 0.06% of patients and was more likely to be reported by centers with lower proportions of patients vaccinated against HBV. The prevalence of antibody to hepatitis C virus was 10.4% among patients and 2.0% among staff.

At least one patient with vancomycin-resistant enterococci was reported by 11.5% of centers, more commonly by hospitals (vs freestanding centers not located in hospitals) and government centers, and centers located in certain geographic areas. Vancomycin was received by 7.2% of patients in December 1995. The percentage of centers reporting patients with other pathogens was 7.9% for active TB, 39% for HIV, and 40% for methicillin-resistant *Staphylococcus aureus*.

FROM: Tokars JI, Miller ER, Alter MJ, Arduino MJ. National surveillance of dialysis associated diseases in the United States, 1995. *American Society for Artificial Internal Organs Journal* 1998;44:98-107.

Surveillance of Unexplained Illness and Death

Researchers from the CDC's Emerging Infections Program (EIP) recently summarized the findings from population-based surveillance studies being conducted by