

Use of Marginal Punched Data Cards in Surveillance of Hospital-Acquired Infections

LEWIS B. LEFKOWITZ, Jr., M.D.
GAIL B. LAVELY, R.N.
WILLIAM SCHAFFNER, M.D.

INFECTIONS acquired during hospitalization constitute a significant hazard to patients' health and contribute to the increasing cost of medical care (1). Contemporary approaches to reducing this hazard center about systems of infection surveillance. Investigators at the Center for Disease Control, Health Services and Mental Health Administration, have carefully developed model surveillance methods which have been tested in selected community hospitals (2-4) and are now rapidly being introduced into many hospitals across the country. Such systems usually employ nurse-epidemiologists who use a

variety of data-gathering techniques to calculate infection rates, identify problems, and effect remedial measures (5-7).

Although there have been problems in implementing methods of data collection, hospital epidemiologists may have their greatest difficulty in analysis of the data, without which appropriate control measures cannot be instituted. As most programs use various forms (8- by 11-inch sheets), a major impediment to rapid analysis is the cumbersome mass of paper to sort and tabulate. At present, only a few hospitals have access to computers that are free to be used to store and retrieve information on hospital-acquired infections. We describe in this report the use of specifically designed cards which can be punched on the margins to record information concerning each hospital-acquired infection. This card is simple, inexpensive, compact, and allows rapid analysis of data.

Methods and Discussion

The techniques of surveillance and definitions of what constitutes a hospital-acquired infection have been carefully detailed elsewhere (1-3). At the Vanderbilt University Hospital, the nurse-epidemiologist identifies those patients considered likely to have hospital-acquired infections and completes the patient-infection card (see chart) during

her work rounds, using data obtained from the patient's chart and from the bacteriology laboratory. The card is stamped with the patient's identification, and the nurse checks the appropriate boxes around the margin. She also records additional pertinent information on the card. Comments and progress notes may be entered in the remarks section and on the reverse side of the card.

A separate card is used for each hospital-acquired infection. A patient with both hospital-acquired urinary tract and surgical wound infections would have two cards. If the urinary tract infection also produced a secondary bacteremia, this fact would also be noted on the card describing the urinary tract infection. A "primary" bacteremia associated with an intravenous catheter, however, would be recorded on a separate card. Antimicrobial drugs are checked only if they have been given within the 72 hours preceding the first positive culture. Decisions on whether or not the infection was hospital acquired are made by the hospital epidemiologist.

The 8- by 5-inch card fits comfortably into the side pocket of most laboratory coats and is thick enough to file easily. The checked spaces on the card are punched daily in the office. When the card has been completed, it can be used immediately to collate clinical, bacteriological, and epidemiologic information. It may be modified with relative ease when new antibiotics are introduced or if it becomes apparent that micro-organisms not listed are being encountered frequently. For example, the card may be modified to include such antibiotics as gentamicin and carbenicillin and the micro-organ-

Dr. Lefkowitz is associate professor of preventive medicine, department of preventive medicine and public health, and Dr. Schaffner is assistant professor of medicine, Vanderbilt University School of Medicine. Dr. Schaffner is also epidemiologist and director of the bacteriology laboratories, and Mrs. Lavelly is nurse-epidemiologist, Vanderbilt University Hospital.

The development of the method reported was supported in part by Public Health Service grants A1-03082 and A1-00323. Tearsheet requests to Lewis B. Lefkowitz, Jr., M.D., Department of Preventive Medicine and Public Health, Vanderbilt University School of Medicine, Nashville, Tenn. 37203.

