Health Care Assessment

Hospital Structure and Performance. ANN BARRY FLOOD and W. RICHARD SCOTT with BYRON W. BROWN, JR., and others. Johns Hopkins University Press, Baltimore, MD, 1987. xx, 396 pp., illus. $50. The Johns Hopkins Series in Contemporary Medicine and Public Health.

The Stanford Center for Health Care Research formally existed for only seven years, from mid-1971 to 1978, but the research produced by SCHCR staff during that brief period will have an impact on health services research and, it is to be hoped, hospital regulatory initiatives for years to come. *Hospital Structure and Performance*, coauthored by Ann Barry Flood and W. Richard Scott, summarizes over ten years of work on three major data sets concerning hospital performance. Although the book is not always easy going for the nontechnical reader, the importance of its contributions, both for the measurement of hospital performance and for an understanding of the various factors affecting it, makes it worth the effort.

The research of the Stanford Center developed around findings from the National Halothane Studies of the late 1960s concerning the large differences observed in postsurgical mortality among sampled hospitals. Were these differences explained solely by differences in the patient populations treated by different hospitals, or were characteristics of the hospitals themselves related to surgical care outcomes? This initial question of "institutional differences" in postoperative mortality rates was the subject of the first major study of the SCHCR, to be followed by studies of service intensity (the total amount of specific diagnostic, treatment-related, and therapeutic services consumed during hospitalization) and length of stay. The combination of these studies allowed the team to unravel some of the knots linking quality and cost of care in hospitals.

Several of the chapters in this volume will be familiar to readers of health service research journals. They appear here for the first time bracketed by careful descriptions of the underlying theoretical model behind all three studies and of the great efforts made to develop outcome measures of hospital care quality and service intensity that take into account patient characteristics and physical status at the time of admission. In brief, the methodology developed by the SCHCR researchers involves a complex standardization process for comparing expected and observed surgical outcomes (mortality and morbidity rates after surgery), which takes into consideration (or controls for) the patient's primary diagnosis, health status at admission, surgical treatments received, disease stage, age, and sex. Once the effects of these factors have been accounted for, differences in surgical outcomes across hospitals larger than expected by chance can be related to (or possibly explained by) various organizational dimensions (hospital capacity, control structures, and experience).

One of the most important analyses described in this volume concerns the relationship between service intensity and length of stay in the hospital (both factors associated with cost) and postsurgical outcomes. The crucial question to be answered in this regard is whether more costly services lead to better care outcomes. Using their adjusted measures of surgical outcome, Flood and Scott determined that, at the level of individual patients, more services of a specific sort (diagnostic, therapeutic, or other nonroutine care-related services) are associated with better surgical outcomes. On the other hand, a shorter length of stay in the hospital is also associated with better outcomes. These results have obvious implications for the current system of hospital reimbursement for Medicare patients based on prospective payment using fixed payments per case classified by Diagnosis Related Group (PPS/DRG). The DRG system is based on an assumption that if hospitals are limited to a predetermined payment amount per case, care-givers will strive to keep both services and days spent in the hospital at a minimum. Early evidence suggests that average length of stay has decreased significantly, but it is unclear exactly what will happen to levels of service intensity or whether or not patients are being discharged without all the services they should receive. The SCHCR data clearly show, however, that the cost of care and the quality of care are related, and the authors rightly suggest that changing one factor without carefully considering the other can result in a serious malfunctioning of the health-care delivery system.

Another important set of results described in this volume (and previously published as journal articles) examines the effects of volume or hospital experience on surgical outcomes; that is, does more experience with certain kinds of patients or certain kinds of surgeries lead to better outcomes? The authors' data suggest that sheer increases in volume do not necessarily lead to improved hospital performance, and indeed larger hospitals do not necessarily provide better care. However, increases in the volume of surgical patients with specific types of problems are associated with better surgical outcomes. These results imply that regionalization of hospital services could contribute to better overall levels of care if the distribution of services throughout a region is based on specialization and the routinization of specialized procedures within hospitals and not solely on hospital size or location. This sort of specialization is particularly pertinent to multihospital systems, where corporate-level control and coordination could influence the design of systems to reflect the differential experience of hospitals with certain kinds of procedures for treating certain types of patients.

Finally, perhaps the most significant contribution of this research is the design of quality-of-care measures (adjusted for patient differences and based on care outcomes), which are potentially accessible to and usable by any hospital that routinely abstracts information from patient records in a method similar to that of the Professional Activities Study (PAS) system of the Commission on Professional and Hospital Activities (CPHA). The Stanford Center researchers used their own on-site measures from patient records to calculate post-surgical outcomes in 17 hospitals, compared those measures to similar computations using PAS data for the same patients in the same hospitals, and obtained fairly similar results. Although they caution that further refinement of abstract data records on post-discharge mortality is needed, it is clearly possible to obtain appropriately standardized measures of surgical outcomes using hospital abstract data. As the authors suggest, hospitals could use the methods developed by the SCHCR as the basis "for the development of routine monitoring systems to evaluate the quality of care" (p. 351). However, the actual development of such monitoring systems is of course dependent upon the beliefs of medical professionals, hospital administrators, and health policymakers that the quality of hospital care *should* be routinely monitored. It will also depend upon a more general conviction in the health sector and the health policy arena that quality and cost of care are not independent, separable issues.

MARY L. FENNELL
Department of Sociology, Pennsylvania State University, University Park, PA 16802