

Changes in Quality of Care for Five Diseases Measured by Implicit Review, 1981 to 1986

Lisa V. Rubenstein, MD, MSPH; Katherine L. Kahn, MD; Ellen J. Reinisch, MS; Marjorie J. Sherwood, MD; William H. Rogers, PhD; Caren Kamberg, MSPH; David Draper, PhD; Robert H. Brook, MD, ScD

We measured quality of care before and after implementation of the prospective payment system. We developed a structured implicit review form and applied it to a sample of 1366 Medicare patients with congestive heart failure, acute myocardial infarction, pneumonia, cerebrovascular accident, or hip fracture who were hospitalized in 1981-1982 or 1985-1986. Very poor quality of care was associated with increased death rates 30 days after admission (17% with very good care died vs 30% with very poor care). The quality of medical care improved between 1981-1982 and 1985-1986 (from 25% receiving poor or very poor care to 12%), although more patients were judged to have been discharged too soon and in unstable condition (7% vs 4%). Except for discharge planning processes, the quality of hospital care has continued to improve for Medicare patients despite, or because of, the introduction of the prospective payment system with its accompanying professional review organization review.

(*JAMA*. 1990;264:1974-1979)

QUALITY of care can be judged either by implicit or explicit review.^{1,6} Explicit review relies on a priori fixed criteria, while implicit review is dependent on the practitioner's opinions. Implicit review of the medical record is the current community gold standard for making final judgments about the quality of care.⁷ The purpose of this study was to improve the implicit review method, to determine its reliability and validity,

From the Health Program of the RAND Corp, Santa Monica, Calif (Drs Rubenstein, Kahn, Sherwood, Rogers, Draper, and Brook and Mss Reinisch and Kamberg); and the Departments of Medicine (Drs Rubenstein, Kahn, and Brook) and Health Services (Dr Brook), UCLA.

The opinions, conclusions, and proposals in the text are those of the authors alone and do not necessarily represent the views of the RAND Corp or UCLA.

Reprint requests to the RAND Corp, 1700 Main St, PO Box 2138, Santa Monica, CA 90406-2138 (Dr Rubenstein).

and then to use it to evaluate changes in the quality of medical care for Medicare patients in the United States between 1981 and 1986.

PATIENTS AND METHODS

Patient Sample

The implicit review sample was randomly selected from the 14 012 Medicare patients who were included in the study.^{8,9} One thousand three hundred sixty-six medical records (10%) were selected to undergo implicit review. Deaths were oversampled; approximately 50% of patients whose records underwent implicit review had died in the hospital. In the analyses reported herein, data have been reweighted to reflect the original 14 012 patients sampled.

Performing Implicit Review

To perform implicit reviews, reviewers were instructed to examine the entire medical record with the exception of nursing notes.¹⁰ Nursing notes were available to the reviewer for use as needed but because of time constraints were not reviewed in their entirety. Reviewers answered 27 questions that covered the process of physician and nursing care; the appropriateness of use of hospital services; patient prognosis; treatability of the patient's condition; preventability of death when it occurred; the quality of the outcome; and an overall assessment of the quality of care provided during the hospitalization. Ratings were based on Likert scales; a five-point scale from very poor to excellent was used for most of the items. We used the same review form for patients with congestive heart failure, myocardial infarction, and pneumonia (Figure). We modified the form slightly for hip fracture and for cerebrovascular accident.

Twenty-five physician - reviewers participated in the study. One reviewer per disease was selected by each of the five state professional review organizations participating in the study, but each reviewer reviewed records from all states. We randomly assigned records to reviewers. No reviewer reviewed patients from more than one of the five disease groups. All reviewers were board certified. Internists reviewed records of congestive heart fail-

