

## Effect of Hospitalists on Quality and Cost

Palmer HC, Armistead NS, Elnicki DM, et al. The effect of a hospitalist service with nurse discharge planner on patient care in an academic teaching hospital. *Am J Med* 2001;111:627–32.

### Study Overview

**Objective.** To determine the impact of implementing a hospitalist service with a nurse discharge planner on resource utilization, quality of care, and resident teaching at an academic hospital.

**Design.** Nonrandomized, prospective trial.

**Setting and participants.** Consecutive patients admitted to 1 of 3 possible inpatient medicine services over a 1-year period at a single institution. The authors excluded Medicare length-of-stay (LOS) outliers and patients with major surgical procedures.

**Intervention.** Patients received care from (1) a hospitalist with a nurse discharge planner, (2) a general internist, or (3) a specialist (neither with a nurse discharge planner). Attending physicians rotated every third day, and patients were assigned to an attending depending on the service on call at the time of admission. The hospitalists had no specialized training and were general internists who spent 4 months per year on inpatient wards. Generalists and specialists typically spent 2 weeks to 1 month per year attending. The generalists and specialists maintained an outpatient clinic during their ward responsibilities, while the hospitalists did not.

**Main outcome measures.** Primary outcomes included resource utilization, quality of care, and resident and student satisfaction measures. Resource utilization included average cost per patient stay, hospital LOS, and laboratory and radiology testing costs. Patients who were only observed and not admitted (LOS < 24 hours) were included in the cost analyses but not the LOS analyses. Quality measures included 30-day readmission rates, inpatient mortality, and patient satisfaction scores. Residents and medical students were also surveyed concerning their satisfaction with overall teaching and supervision.

**Main results.** During the study period, there were 2577 admissions to the medical services and 2464 were included in the analysis. In demographic comparisons between the 3 groups, age, sex, and case mix were similar. However, the

specialist services had fewer managed care patients (28 versus 53 for generalists and 45 for hospitalists;  $P < 0.01$ ) and more Medicaid patients (176 versus 118 for generalists and 137 for hospitalists;  $P = 0.03$ ) than the generalists or hospitalists. The hospitalist service had more patients admitted for observation when compared with both groups (302 versus 235 for generalists and 205 for specialists;  $P < 0.001$ ). Hospitalists had a lower average cost per patient (\$4290) compared to specialists (\$6066;  $P < 0.001$ ). The differences in cost were not significant between hospitalists and generalists (\$4850). However, hospitalists had shorter mean LOS (4.4 days) compared with specialists (6.0 days) and generalists (5.2 days;  $P < 0.001$  for both groups). Readmission rates were similar between all the attending physicians. Mortality rates were higher with specialists (5%) versus generalists (2.6%) and hospitalists (2.2%;  $P = 0.002$ ), and this difference remained significant even after adjusting for age, payer status, and case mix. There were no statistically significant differences between patients', residents', or students' satisfaction scores between the 3 attending types.

**Conclusion.** A hospitalist service with a nurse discharge planner was associated with improved resource utilization without any loss in quality of care or patient satisfaction.

### Commentary

The number of practicing hospitalists has exploded [1]. However, the available data evaluating the effect of hospitalists on patient care is limited. While the benefit of having an attending with more time available for patient care and teaching seems clear, some concerns have arisen in regards to patient continuity of care [2]. Palmer et al have contributed to this literature with a prospective "head-to-head" comparison of hospitalists to generalists and specialists. This study is important not only because it was prospectively done, but also because the authors collected a range of important outcomes with which to compare these groups.

Unfortunately, the comparisons are not exactly head-to-head. The hospitalist service had a nurse discharge planner. It is difficult to know whether the reduced costs were due to the effect of the hospitalist or the discharge planner. The nurse discharge planner was involved in the determination of admission versus observation status, which surely con-

tributed to a reduced cost. The nurse discharge planner also was responsible for educating the residents about the cost of tests. This educational intervention might have significantly contributed to the reduced costs seen in the hospitalist group. Furthermore, the hospitalists were implemented at the institution specifically in an effort to lower inpatient costs. It is unclear to what extent cost reduction was emphasized within the other services.

### **Applications for Clinical Practice**

Hospitalist services with a nurse discharge planner can lower hospital costs and LOS without compromising quali-

ty of care. However, it is unclear whether a nurse discharge planner on other services or stronger emphasis on cost containment might produce similar cost savings.

*—Review by Harvey J. Murff, MD*

### **References**

1. Lurie JD, Miller DP, Lindenauer PK, et al. The potential size of the hospitalist workforce in the United States. *Am J Med* 1999;106:441–5.
2. Wachter RM. An introduction to the hospitalist model. *Ann Intern Med* 1999;130(4 Pt 2):338–42.

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