TAKE-HOME POINTS FROM LECTURES BY CLEVELAND CLINIC AND VISITING FACULTY

Trends in hospital medicine: Hospitalist advantages revealed

FRANKLIN A. MICHOTA, MD
Head, Section of Hospital and Preoperative Medicine, Department of General Internal Medicine, Cleveland Clinic

ABSTRACT

Although research on hospitalists is in its infancy, this model appears to reduce health care costs while providing care of at least equal quality to that provided by primary care physicians. This paper reviews recent reports.

DO HOSPITALISTS—specialists in inpatient care—reduce health care costs? And do they provide high-quality care?

The number of hospitalists has grown tremendously in the last 5 years, indicating that this model of care has appeal. Hospitals, hospital systems, and large group practices now employ hospitalists, presumably because administrators believe that hospitalists will save the system money while providing high-quality care. But do we know yet if these assumptions are true?

Available data are few but do seem to indicate that hospitalists provide cost-effective, high-quality care.

MODELS OF INPATIENT CARE

Wachter[1] described four models of inpatient care:

- The primary care physician model, in which primary care physicians take care of their own patients in and out of the hospital
- The hospital rotation model, in which primary care physicians in a group take turns caring for hospitalized patients (the classic model in most academic centers)
- The voluntary hospitalist model, in which hospitalists are available, but primary care physicians either sign their patients over or continue to take care of their own patients
- The mandatory hospitalist model, in which primary care physicians must turn over inpatient care to hospitalists.

Studies have compared the hospitalist model with other models, usually in terms of specific criteria: resource utilization (length of stay, cost per case), outcomes (ie, quality of care issues such as readmission rates), and patient and physician satisfaction (continuity of care, communication between care givers).

DO HOSPITALISTS REDUCE COSTS?

Studies of hospitalist vs traditional care

Hospitalists can reduce length of stay and cost per case

Diamond et al[2] looked retrospectively at the effect of full-time faculty hospitalists on the efficiency of care for 1,620 patients in a community hospital in 1995. They concluded that hospitalists significantly decreased the median length of stay from 6 days to 5 days ($P < .001$), with a corresponding significant decrease in the median cost per case of about $690 per patient ($P < .001$).

The study had major flaws, however. For example, despite comparison cohorts, it did not control well for existing downward trends in length of stay and cost per case (secular trends). Nevertheless, the hospitalist group clearly demonstrated some benefit over the more traditional model in which primary care physicians take care of their own patients.

Wachter et al[3] prospectively studied 1995–1996 data at a teaching hospital to compare a voluntary hospitalist model with a hospital rotation model, adjusting for case mix and secular trends. Their results were similar to those of Diamond et al[2]: a significant decrease in average-adjusted length of stay from almost 5 days to 4.3 days ($P = .01$), and a correspond-

ing decrease in average-adjusted hospital costs of around $700 ($P = .05$).

Stein et al[4] compared hospitalist and nonhospitalist models in a slightly different way. They looked at a retrospective cohort and used only a single diagnosis (pneumonia) for comparison, whereas previous studies had used a broad mix of diagnoses. They also adjusted for the hospital's case mix and secular trends. They found that sick patients with pneumonia cared for by the hospitalist-resident team had mean lengths of stay significantly shorter than those cared for by nonhospitalists (5.4 days vs 6.5 days, $P < .05$). The cost per case was not statistically different between the two models, but there was a suggestion that the hospitalist model was more cost-effective.

Meltzer et al[5] performed the only prospective randomized trial to date that compared hospitalist and nonhospitalist care models with appropriate adjustments for case mix and secular trends. Interestingly, they found no differences between the models in the first 6 months, but during the second 6 months the hospitalist model was associated with a significant drop in the length of stay ($P < .01$), along with 11% lower costs ($P < .01$). Both models performed equally when patients were sicker and their illnesses more complex. The hospitalist model demonstrated greater cost savings with routine admissions than in those considered to be most acutely ill.

Hospitalist care is at least as good as standard care

Auerbach[6] compared a voluntary hospitalist model with a primary care model for 2 years and found that the hospitalist service grew steadily, presumably because primary care physicians were referring more patients to hospitalists over the 2-year period. After adjusting for case mix and secular trends, no significant difference in patient outcomes and costs was observed between the two models during the first year. In the second year, hospitalist patients had shorter lengths of stay ($P < .0001$) and lower costs ($P < .0001$) when compared with community physician patients. No significant difference in odds of readmission was noted among hospitalists in the first or the second year.

Markoff et al[7] retrospectively compared almost 1,000 hospitalist patients with a control group of patients not treated by hospitalists. As with the Auerbach study,[6] adjusted length of stay significantly declined ($P < .05$).

Davis et al[8] retrospectively studied more than 400 hospitalist patients in 10 common diagnosis-related groups at a rural community hospital and observed a statistically significant reduction in the mean length of stay from 5.5 days to 4 days ($P < .001$), and a mean reduction of $600 in cost per case ($P < .001$).

Hackner et al[9] compared 477 hospitalist Medicaid cases with a control group of nonhospitalist patients at a university-affiliated community medical center. After adjustments for case mix and secular trends, the hospitalist patients had significantly lower median length of stay (3 days vs 4 days, $P < .0001$) and lower median total costs per case ($4,002 vs $4,853, $P < .0001$).

Conclusions from reports to date

These studies show that hospitalists can decrease resource utilization. But resource utilization depends on how resources are measured and on whether costs are merely shifted to other institutions. In none of the studies cited in this article was a reduction in resource utilization (length of stay, cost per case) due to shifting patients from the hospital to, for example, a skilled nursing facility.

DO HOSPITALISTS GIVE BETTER CARE?

No one has shown convincingly that hospitalists give better care than patients would receive with standard care. However, Auerbach[6] noted a significantly lower adjusted in-hospital mortality (adjusted odds ratio for death 0.6, 95% CI 0.4, 0.9) in hospitalist patients 2 years after implementation of the hospitalist model. In their randomized trial, Meltzer et al[10] also found a significant mortality reduction in the second year of the hospitalist model at both 30 days ($P < .04$) and 60 days ($P < .07$).

Diamond et al[2] demonstrated a decrease in readmission rates with hospitalist care, and Markoff et al[7] showed a decrease in return emergency room visits. Abenhaim et al[11] described a hospitalist-run medical short-stay unit with lower rates of in-hospital complications and 30-day readmission rates compared with non-hospitalist controls matched by diagnosis-related group.

Others have demonstrated that hospitalists adhere to practice guidelines more than nonhospitalists, which should also have implications for quality of care.[12,13]

All studies cited in this article have demonstrated that care by a hospitalist is at least equivalent to standard care, which is encouraging because it implies that reducing resource utilization does not mean lowering the quality of care.

ARE PATIENTS SATISFIED?

We have no evidence yet that patients are more satisfied with hospitalist care than with standard care. However, patient satisfaction with in-hospital care has neither increased nor declined over the past decade. In most studies of the hospitalist model, patients rated hospitalist care the same as standard care in terms of satisfaction. This is encouraging, since detractors have claimed that the use of hospitalists takes patients away from the doctor they know and trust. Interestingly, outpatients are more satisfied after switching to a hospitalist model, due to increased access to their primary care physician.[14]

Physicians probably overestimate their importance to patients

Despite physician concerns regarding their patients' satisfaction with a hospitalist model of care,[15,16] most physicians probably overestimate their relative importance to their patients. Meltzer et al[17] surveyed patients to determine how much money they would be willing to pay to be taken care of by their primary care physician and not a hospitalist. In the survey, 70% said they would prefer to be taken care of by their primary care provider, 20% had no preference, and 7% would prefer a hospitalist. Of those who said they would prefer to be seen by their own primary care physician, however, most said they would only pay around $35 for the privilege. A small percentage said they would pay as much as $1,000. One could conclude from this survey, then, that most patients wouldn't care whether a primary care provider took care of them or not.

Too little continuity of care

In any event, some say that continuity of care no longer exists, that in most large group practices it is very difficult for primary care physicians to see their patients when they need to be seen. If our health care system already has little or no continuity of care and if patients continue to switch back and forth because of changes in their employers' insurance plans, then a hospitalist model should have little effect on patients' perceptions regarding continuity of care.

DOES COMMUNICATION SUFFER?

Very few hospitalists and primary care physicians believe that care never suffers during the inpatient-outpatient transition. Communication between the hospitalist and the primary care physician is the key to a successful hospitalist program, and without it resource utilization cannot be decreased and quality of care cannot be maintained.

Communication during inpatient-outpatient tranfers is key

Technology can improve communication links, but certainly contact over the phone is preferred. Our particular group uses e-mail much more often than the telephone. One private hospitalist company uses Palm Pilot technology, which faxes progress notes to primary care physicians daily by putting information through a database in a central computer.

In one instance[18] a hospitalist service was discontinued because of disagreement between the physician group, the hospitalists, and administrators. But most reports of successful hospitalist services associate the success with the fact that the other physicians involved were satisfied; if they had not been, the hospitalist model probably would not have worked.

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ADDRESS: *Franklin A. Michota, MD, Section of Hospital and Preoperative Medicine, Department of General Internal Medicine, The Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, OH 44195; e-mail michotf@ccf.org.*