BRIEF REPORT

Physician Views on Caring for Hospitalized Patients and the Hospitalist Model of Inpatient Care

Andrew D. Auerbach, MD, MPH, Roger B. Davis, ScD, Russell S. Phillips, MD

We surveyed 241 board-certified internists affiliated with a large teaching hospital (Boston, Mass) before implementing a hospitalist service to determine attitudes towards providing inpatient care and the hospitalist model. Of physicians surveyed, 66% responded. Most disagreed that inpatient care is ''an inefficient use of my time,'' only 10% felt a hospitalist service would improve patient satisfaction, and 54% felt it would hurt patient-doctor relationships. Multivariable analyses suggest that physicians physically furthest from their inpatient site were had more favorable attitudes toward the hospitalist model; more experienced and busier physicians were more negative. Future investigations should determine strategies for implementing the hospitalist model which address physicians' concerns.
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Traditionally, primary care physicians have cared for their patients when hospitalized. However, increasing patient severity of illness and organizational changes have made physicians' responsibilities increasingly complex in both the inpatient and outpatient settings, stimulating the emergence of the hospitalist model of care. In the hospitalist model, a hospitalist becomes the patient's physician during hospitalization, with the outpatient physician resuming care of the patient after discharge. The hospitalist model has grown due to research suggesting reductions in costs with similar clinical outcomes.[1–5] However, little data exist to describe physician attitudes towards caring for inpatients or the hospitalist model.

To examine physicians' experiences with providing inpatient and outpatient care and their attitudes towards the hospitalist model, we surveyed physicians practicing where the model had not been widely implemented. In addition, we performed analyses to determine physician factors associated with different attitudes towards the hospitalist model.

Received from the Department of Medicine, University of California, San Francisco, Calif (ADA); and Division of General Internal Medicine and Primary Care, Beth Israel Deaconess Medical Center, Boston, Mass (ADA, RBD, RSP).

Address correspondence to Dr. Auerbach: Department of Medicine, University of California, San Francisco, Box 0120, San Francisco CA 94143-0120 (e-mail: ada@medicine.ucsf.edu).

METHODS

Site

Beth Israel Deaconess Medical Center (BIDMC) is a 591-bed tertiary care academic medical center located in Boston, Mass and is composed of two campuses located two blocks apart; medical patients are admitted to each campus. House staff write all orders, and provide 24-hour coverage of inpatients. At the time of this survey (June 1998), hospitalist services were not available at BIDMC.

Subjects

Using administrative data, we identified 380 internal medicine board-certified physicians who had at least 1 admission at BIDMC in the 5 months prior to April 1, 1998.

Survey Methods

Surveys were developed in 3 stages. First, domains of physician attitude were identified and questions generated. Second, items were modified or discarded after being posed to small groups of physicians and survey experts. Third, the survey instrument was pretested on a small sample of clinicians not affiliated with BIDMC.

A finalized survey was mailed to physicians with a cover letter explaining the academic intent of the study, and assuring confidentiality. We sent two follow-up mailings to nonesponders; a third was made to subjects who indicated willingness to participate after a telephone contact.

Additional Data Sources

Administrative databases were used to collect physician specialty data, as well as the number of admissions per physician in the 5 months prior to April 1998. Primary care physicians were identified using a "Guide to Physicians" published by CareGroup, the parent organization to Beth Israel Deaconess Medical Center.

Statistical Analysis

We used descriptive statistical methods to characterize physician responses. Items designed to measure physician attitude toward the hospitalist model were examined using

Spearman correlation analyses. Highly correlated items were determined by factor analysis and Cronbach α, and were included in the summary score. Responses to correlated items were summed, divided by the maximum possible sum, then multiplied by 100, resulting in a score between 0 and 100. We then fit multivariable linear regression models to determine factors correlated with the attitude score.

RESULTS

Physician and Practice Characteristics

Of 380 surveys mailed, 280 were returned. Thirteen of those returned were undeliverable and considered mailed to ineligible physicians. Twenty-six were returned in an unusable state, or because the physician refused to participate, and were considered nonresponders. Thus, the response rate was 66%.

The median age of physicians in our sample was 43 years (interquartile range [(IQR]; 39, 52), and a majority identified themselves as white (90%) and as men (73%). Nearly half (44%) were identified as primary care providers. Cardiology (13% of respondents) was the most common additional specialty represented. Most physicians (58%) practiced more than 20 hours each week in an outpatient setting. Eighty-one percent practiced within 15 minutes of their inpatient site. Few reported that they practiced part-time, or that they performed procedures as part of their medical practice. A majority of physicians spent fewer than 3 hours per week caring for inpatients and most (84%) provided care to their patients.

Physician Attitude Toward Care of Inpatients and the Hospitalist Model of Inpatient Care

Physicians were divided on whether caring for inpatients made it more difficult to care for outpatients (42% vs 32%), but few (27%) agreed that inpatient care is "an inefficient use of my time" (Table 1). A majority of physicians felt that providing care to inpatients was "satisfying," but only 15 (6%) felt more comfortable caring for inpatients than outpatients. The majority (68%) responded that care of inpatients was best directed by "the physician who has a long-term relationship with the patient." Most (79%) physicians stated that they were familiar with the hospitalist model. Similar proportions agreed and disagreed (36% and 32%, respectively) that the model "is a good idea," but only 11% felt it was "a passing fad." Responses to questions regarding the hospitalist model's effects upon the quality of care (33% neutral) were mixed. Ten percent of physicians agreed that a hospitalist service would improve patient satisfaction, and 54% felt it would reduce their satisfaction with their medical career and hurt their relationships with patients.

Physician and Practice Factors and Physician Attitudes About the Hospitalist Model of Care

The summary score of physician attitudes toward the hospitalist model used 10 highly correlated items from the questionnaire (Cronbach $\alpha = 0.87$). Using linear regression techniques, we determined practice and physician factors associated with differences in summary score.

In multivariable models, physicians were more likely to have a favorable opinion of the hospitalist model if they

Table 1. Physician Attitudes Toward the Care of Inpatients and the Hospitalist Model of Care (*N* = 241)

	Strongly Agree/Agree *n* (%)	Neutral/NA *n* (%)	Disagree/Strongly Disagree *n* (%)
Caring for hospitalized patients makes it more difficult to provide care to outpatients.	101 (42)	63 (26)	77 (32)
Caring for hospitalized patients is an inefficient use of my time.	65 (27)	42 (18)	134 (55)
Caring for hospitalized patients is a satisfying part of my clinical practice.	182 (76)	37 (15)	22 (9)
I feel more comfortable caring for hospitalized patients than outpatients.	15 (6)	109 (45)	117 (48)
Care of inpatients is best directed by the physician who has a long-term relationship with the patient.	165 (68)	57 (24)	19 (8)
I am familiar with the "hospitalist" model of inpatient care.	191 (79)	36 (15)	14 (6)
I think that the hospitalist model of care is a good idea.	86 (36)	77 (32)	78 (33)
I think the hospitalist model of care is a passing fad.	26 (11)	99 (41)	116 (48)
Use of a hospitalist service would improve quality of care for inpatients.	90 (37)	79 (33)	72 (30)
Use of a hospitalist service would increase patient satisfaction.	24 (10)	70 (28)	147 (61)
Use of a hospitalist service would adversely affect my relationships with patients.	130 (54)	69 (29)	42 (17)
Use of a hospitalist service would diminish my satisfaction with my career choice.	131 (54)	58 (34)	52 (21)

Table 2. Factors Correlated with Physician Attitude Toward the Hospitalist Model of Care

Factor*	Score Difference†	*P* Value
Graduate from U.S. medical school	−2.11	.57
Postgraduate year 15 to 24	3.72	.18
Postgraduate year 25 or more	6.40	.03
More than 15 minutes travel to inpatient site	−9.00	.003
30 or more outpatient hours per week	5.19	.04
Primary care provider	1.52	.60
1–3 admissions per week	7.30	.005
4 or more admissions per week	13.31	.006
Admits to more than 1 hospital	1.86	.49
Procedural specialty (cardiology, pulmonary/critical care, gastroenterology)	0.64	.85
Inpatient consultation-based specialty (infectious diseases, hematology, nephrology, endocrinology)	5.38	.10

* *Referent category for each factor (in order): non-U.S. medical graduates, postgraduate year less than 15, less than 15 minutes of travel to inpatient site, fewer than 30 hours in the outpatient setting each week, nonprimary care providers, fewer than 1 admission per week, admits to 1 hospital only, and nonprocedural, nonconsultive specialties (general internal medicine, geriatrics).*

† *Mean score = 50, scores that are less than zero indicate a more favorable attitude toward the hospitalist model of care.*

traveled more than 15 minutes to their inpatient site (9.00 points more positive attitude score, $P = .003$) (Table 2). Physicians whose postgraduate year was 25 or more (6.40 points more negative score, $P = .03$), those who spent more than 30 hours per week caring for outpatients (5.19 points more negative score, $P = .4$), and those who had more than four admissions per week (13.31 points more negative, $P = .006$) were more likely to have a negative attitude score. Other characteristics such as graduation from a U.S. medical school, subspecialty, the number of hospitals where they cared for inpatients, and whether they were a primary care provider were not significantly associated with differences in attitude score.

DISCUSSION

Physicians in this study, although more comfortable providing care to outpatients, were generally unlikely to favor relinquishing inpatient responsibilities to a hospitalist service. Interestingly, in adjusted analyses, we observed that physicians who had busier clinical practices in either the inpatient or outpatient settings were less likely to favor the hospitalist model of care.

To our knowledge, no other published data exist to describe physician attitudes towards the hospitalist model of care prior to implementation. Implementation of a hospitalist service at the University of California, San Francisco showed no reduction in attending physician or house staff satisfaction.[4] A survey of California primary care providers suggests that physicians remain concerned about the effect of the hospitalist model on their relationship with patients.[6] Findings from the California study, as well as those from a recent national survey, suggest that experience with voluntary hospitalist services may alleviate many physicians' concerns, however.[7]

Physicians in our survey had mixed opinions of how the hospitalist model might affect patient care, although only a few felt that it was a "passing fad." The majority of respondents felt that the model would adversely affect patient satisfaction and patient-doctor relationships. Previous studies have not demonstrated decreased patient satisfaction in the hospitalist model. However, studies have consistently suggested greater clinical efficiency in the hospitalist model,[4,5,8] with possibly lower readmission rates.[2]

An important proposed advantage of the hospitalist model for outpatient physicians is reduced inpatient work (and potentially increased outpatient productivity) for physicians with busy practices. However, few physicians in our survey felt tension between providing care in both settings in terms of time-efficiency. In fact, findings from multivariable analyses suggest that the busiest physicians are least positive about the hospitalist model. The busiest physicians may remain committed to the care of inpatients for many reasons. Possibilities include the satisfaction associated with maintaining inpatient skills, opportunities for interaction with other physicians while caring for inpatients, continuing education provided by inpatient care, opportunities to care for patients at times of crisis, and opportunities to preserve the longitudinal patient-doctor relationship. Our findings may also indicate that those physicians most committed to full-time clinical practice feel most strongly about managing the care of their inpatients themselves.

Findings from our multivariable models also suggest that, independent of workload, physical impediments to providing inpatient care (as indicated by travel time to inpatient site) are associated with a favorable attitude toward the model. Greater acceptance of the hospitalist model among younger physicians may reflect a phenomenon similar to that observed in previous studies of physician attitudes toward the "gatekeeper" model in managed care.[9]

This study has several limitations. As a cross-sectional survey of academic physicians associated with a large tertiary care facility, our findings may not be generalizable to other sites. Because the survey asked about physician experiences in the time prior to the survey, responses are subject to recall bias. Finally, the survey did not collect information regarding the payer mix of patients cared for by each physician. At the time of the survey, however, capitated health plans were not common in the region, and the survey did not include physicians in staff-model HMOs.

Physicians in our survey were generally reluctant to accept the hospitalist model, perhaps due to its perceived

negative effects upon patient-doctor relationships. Despite being more attractive to physicians with busier outpatient practices in theory, the busiest clinicians in our survey had a less favorable attitude toward the model of care; those physically furthest from the hospital were more positive. Future studies should seek to determine the hospitalist model's true effects upon areas of concern to physicians: patient satisfaction, patient-doctor relationships, and the quality of inpatient care.

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