

What Effect Does Increasing Inpatient Time Have on Outpatient-oriented Internist Satisfaction?

Sanjay Saint, MD, MPH, Judith K. Zemencuk, MA, Rodney A. Hayward, MD, Carol E. Golin, MD, Thomas R. Konrad, PhD, Mark Linzer, MD, for the SGIM Career Satisfaction Group

OBJECTIVE: Because career satisfaction among general internists is relatively low, we sought to understand the impact on satisfaction of general internists managing patients both in and outside of the hospital. Using data from a national survey, we asked, "Among outpatient-oriented general internists (i.e., internists who spend less than 50% of their clinical time caring for inpatients), what effect does time spent in the hospital have on physician satisfaction, stress, and burnout?"

DESIGN/PARTICIPANTS: The Physician Worklife Study, in which 5,704 physicians in primary and specialty nonsurgical care selected from the American Medical Association's Masterfile were surveyed (adjusted response rate = 52%), was used. Our analyses focused on clinically active outpatient-oriented general internists ($N = 339$).

MEASUREMENTS AND MAIN RESULTS: We constructed multivariate linear models to test for statistically significant associations between the amount of time spent seeing inpatients and physician satisfaction as measured by several satisfaction scales. Even after controlling for total hours worked and other possible confounding variables, we found that increased time working in the hospital was significantly associated with decreases in satisfaction with administration, specialty, autonomy, and personal time, and significantly associated with an increase in life stress. There was also a significant association between increased time spent in the hospital and burnout.

CONCLUSIONS: Our findings imply that there may be a tension between the practice of inpatient and outpatient medicine by general internists, and suggest that fewer hospital duties may increase career satisfaction for outpatient-oriented internists. Although additional studies are warranted in order to better understand why these relationships exist, our data suggest that the hospitalist model of inpatient care might be one

approach to alleviate stress and improve satisfaction for many general internists.

KEY WORDS: job satisfaction; hospitalists; burnout, professional; primary health care; professional practice.
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General internal medicine is undergoing a change, with the emergence of separate career paths for outpatient and inpatient internists in addition to the more traditional "mixed" inpatient and outpatient model of care.¹ Recently, "hospitalists" have come to the forefronts of both academia and private practice as physicians who specialize in the care of inpatients.^{2,3} Several reasons probably underlie the rise of hospitalists in American medicine.² Managed care organizations see hospitalists as a way to improve efficiency and minimize costs.² Increased levels of severity of illness and complexity among hospitalized patients also may be why some providers choose to focus on either inpatient or outpatient care. Physician stress and dissatisfaction from attempting to balance inpatient and outpatient care also may underlie increases in the numbers of inpatient-focused providers and exclusively outpatient-oriented providers.^{1,4}

Unfortunately, limited information is available about the effect on internist satisfaction of time spent on inpatient care. We used data from a national, population-based survey of physicians to answer the following question: Among outpatient-oriented general internists (i.e., internists who spend less than 50% of their clinical time caring for inpatients), what effect does time spent in the hospital have on physician satisfaction, stress, and burnout?

We hypothesized a priori that time in the inpatient setting would decrease administration, job, and personal time satisfaction, while increasing stress levels. We based these hypotheses on several sources, including: personal experience, prior work using the Physician Worklife Study,^{5,6} and an appreciation of the demand-control model of job stress, in which stress levels rise as demands increase and control decreases.⁷

METHODS

Study Design

The Physician Worklife Study, a nationally representative survey of physicians in primary and specialty nonsurgical care, was conducted to better understand physician satisfaction and work-related issues. The national survey

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Address correspondence and requests for reprints to Dr. Saint: University of Michigan Health System, Room 7E08, 300 NIB, Box 0429, Ann Arbor, MI 48109-0429 (e-mail: saint@umich.edu).

was performed only after extensive development of the final instrument that included both qualitative and quantitative components. Specifically, a formal content analysis of open-ended data gathered from a national physician survey⁸ was performed, followed by merging these findings with results from previous work⁹ in order to develop a working conceptual model of physician job satisfaction.¹⁰ Input from 4 geographically diverse physician focus groups led to further refinements of the model; this final model was used to develop an instrument to assess physician satisfaction that was pilot tested on 2,000 physicians.⁵ After extensive factor and reliability testing, the final instrument used in the national survey was designed.¹¹

We have previously described the overall study design used in the Physician Worklife Study.^{5,11,12} Briefly, an 8-page self-administered questionnaire was designed to measure sociodemographic and practice characteristics of physicians, as well as aspects of job satisfaction. The physician job satisfaction measure was comprised of 36 items measuring 10 domains or facets of job satisfaction⁵: satisfaction with autonomy, personal time, patient care issues, income, administration, and resources; and relationships with patients, colleagues, staff, and community. Each facet included 2 to 5 items, and the respondent's endorsement of each item was scored from 1 to 5 (1 = strongly disagree, 5 = strongly agree). Scores for the 2 to 5 items comprising each subscale were averaged to give a final score for that domain. There were also 12 items that comprised 3 global satisfaction scales: satisfaction with job (overall), career, and specialty. Items were averaged for these subscales in a similar manner. Life stress was measured using the scale adapted from Cohen et al.¹³ This scale had 4 items for which respondents were asked, "In the last month, how often have you felt (for example, for item #1) that you were unable to control the important things in your life?" Other measured aspects of stress included confidence in ability to handle personal problems, feeling that things were going one's way, and a sense that difficulties were piling up. Responses were scored from 1 to 5 with 1 = never, and 5 = very often. Scores for responses for the 4 items were averaged for a stress score for each respondent. Burnout was measured using a single item adapted from the tedium index,¹⁴ with 5 choices including: 1 = "I enjoy my work. I have no symptoms of burnout" and 5 = "I feel completely burned out and often wonder if I can go on..." A score of 3 or higher, based on our prior work,¹⁵ was designated as indicating burnout. Intentions to withdraw from practice were measured by assessing the likelihood of leaving current practice, decreasing work hours, or leaving patient care.

A total of 5,704 physicians from the American Medical Association's Masterfile were first stratified by ethnicity, level of managed care penetration in their area, and specialty (general internal medicine, general pediatrics, family medicine, internal medicine subspecialty or pediatric subspecialty), and then randomly selected. Minority physicians were over-sampled. The Society of General

Internal Medicine coordinated the study while the Cecil G. Sheps Center for Health Services Research at the University of North Carolina-Chapel Hill conducted the survey. Four mailings were sent during 1996 and 1997. The final questionnaire, which included 140 items, was extensively validated.¹² The overall adjusted response rate (correcting for inaccurate addresses, ineligible recipients, refusals, and returned surveys) was 52%.¹² Additionally, a "wave analysis" was performed comparing late respondents to early respondents using the assumption that a non-responder is similar to a very late responder.¹⁶ This analysis suggested a minimal effect of late or non-response, with only 4 out of 140 items demonstrating a correlation of >0.10 between item response and survey return time.

We focused our analyses on general internists (adjusted response rate = 46%). To be included in the analyses, a physician had to report working at least 30 clinical hours a week, list internal medicine as the primary specialty, not list a secondary specialty, and report spending a majority of clinical time (i.e., >50%) in the outpatient setting. Our subjects were therefore primarily full-time, clinically active, outpatient-oriented general internists ($N = 339$).

Statistical Analysis

We constructed multivariate linear regression models to test for statistically significant associations between time spent in the hospital and physician satisfaction domains.^{5,11,12} We also constructed multivariate models with burnout and 3 questions addressing the likelihood of withdrawing from medical practice as dependent variables. Thus, the dependent variables included the 10 satisfaction facets, the 3 global subscales, life stress, burnout, and likelihood of leaving current practice.

To control for potential confounding, covariates included physician age, gender, race (white vs nonwhite), marital status (married vs unmarried), number of children, income, ownership of practice, international medical graduate status, outpatient office hours, hours spent on other patient-related activities, and hours spent on other work activities. To determine if decreasing satisfaction scores were a function of increasing work hours, we conducted additional analyses with total work hours as a covariate.

To better characterize the effect of increasing inpatient time on physician stress and satisfaction, we used regression models to calculate predicted satisfaction scores for the average general internist who spent 0, 4, 8, 14, or 20 hours a week performing inpatient duties, holding all other covariates constant at their weighted means.¹⁷

No independent variables were correlated with each other at a level higher than 0.43, and tolerance testing showed no evidence for multicollinearity. We considered multiple 2-way interactions between independent variables, none of which were significant. Regression diagnostics, including analysis of residuals, leverage, and influence, showed that the data fit each model well. The data were

weighted to adjust for differing response rates and sampling probabilities using STATA (StataCorp, Version 7.0, College Station, Tex). For all statistical analyses, a 2-sided *P* value less than .05 was considered statistically significant.

RESULTS

Physician Characteristics

Table 1 shows the characteristics of the 339 physicians included in this analysis. Approximately 23% were women, and nearly 60% were shareholders or partners in their practice organization. Respondents worked an average of nearly 57 hours per week.

The Effect of Time Spent in the Hospital on Satisfaction

The multivariate linear regression analyses revealed that increased hours in the hospital were significantly associated with decreased satisfaction with administration, autonomy, personal time, and specialty. Increased hours in the hospital was also associated with an increase in stress. Table 2 shows predicted mean satisfaction scores and stress levels for various percentiles of time spent in the hospital for the satisfaction scales in which time in the hospital was a significant predictor. For comparison, we

provide the results for relations with colleagues for which time in the hospital was not predictive. For example, when assessing satisfaction with administration, the difference between the 10th (0 hours) and 90th (20 hours) percentiles of time spent in the hospital was 0.55, a 20% decrease; when analyzing satisfaction with personal time, the difference in scores between the 10th and 90th percentiles of time spent in the hospital was 0.73, a 23% decrease. In comparison, predicted scores for the "satisfaction with relations with colleagues" scale decreased by only 0.12 (a 3% decrease) when moving from the 10th to the 90th percentile of time spent in the hospital. Note that Table 2 reveals a dose-response relationship for all 5 scales in which time in the hospital was a significant predictor.

When analyses were repeated holding constant total hours worked per week, the results remained largely unchanged, suggesting that the lower satisfaction and greater stress associated with more time spent on inpatient responsibilities was not due to overall work hours.

The Effect of Time in the Hospital on Burnout and Work Life Changes

There was a positive association between increased time in the hospital and level of burnout. Holding all other independent variables constant, the mean burnout score increased from 2.1 at the 10th percentile of time spent in the hospital to 2.4 at the 90th percentile, a 14% increase ($P < .05$). To help interpret this finding, the burnout scale label for a score of 2 was, "Occasionally, I am under stress, and I don't always have as much energy as I once did, but I don't feel burned out." For a burnout score of 3, the label was, "I am definitely burning out and have one or more symptoms of burnout, such as physical and emotional exhaustion." Interestingly, increased time spent in the hospital was not associated with an increased likelihood of intending to withdraw from medical practice, decrease work hours, or change jobs.

Table 1. Characteristics of the General Internists in the Physician Worklife Study*

Demographics	
Mean age, y (SD) (N = 339)	47 (9.5)
Female, % (N = 338)	23
White, % (N = 339)	63
International medical graduate, % (N = 339)	27
Married, % (N = 338)	83
Number of children, mean (SD) (N = 332)	2.1 (1.3)
Practice patterns	
Mean 1995 net income from all medical practice, \$ (SD) (N = 305)	137,694 (70,971)
Owner (shareholder or partner) of practice, % (N = 335)	58
Total hours work per wk, mean (SD) (N = 339)	56.5 (14.4)
Hours per wk, mean (SD) (N = 339)	
In the office seeing patients	33.5 (8.0)
In the hospital seeing patients	9.4 (8.2)
Other patient-related activities	9.5 (5.9)
Other work-related activities	4.2 (5.1)
Payment source	
Fully capitated managed care patients, mean % (SD) (N = 289)	19.0 (25.5)
FFS Medicare patients, mean % (SD) (N = 301)	33.1 (22.1)
Medicaid patients, mean % (SD) (N = 288)	9.2 (15.9)
Uninsured patients, mean % (SD) (N = 276)	8.0 (16.4)

* Number of responders in parentheses.

Note: All data presented are survey weighted. FFS, fee for service.

DISCUSSION

Using a national random sample of outpatient-oriented general internists, we found that as time spent in the hospital increases, physician satisfaction in several important domains decreases. There was also a significant association between increased time spent in the hospital and burnout. These findings were independent of overall hours spent working.

Our results suggest that outpatient-oriented providers become increasingly dissatisfied and stressed with increasing inpatient time and therefore may be more willing to relinquish day-to-day care of their hospitalized patients to hospitalist colleagues. Bolstering this argument, a recent survey of outpatient providers found that the majority of primary care physicians with experience with hospitalists reported that hospitalists decreased their workload and increased their practice satisfaction.¹⁸ Furthermore, more than two thirds of the responding primary care physicians

Table 2. Predicted Mean Satisfaction Scores for Alternative Values of Time Spent in the Hospital Seeing Inpatients (N = 339)

Satisfaction Scale [†]	Time Spent in the Hospital Seeing Inpatients (Hours per Week) Predicted Satisfaction Score* Mean (95% CI)				
	10 th Percentile (0 Hours)	25 th Percentile (4 Hours)	50 th Percentile (8 Hours)	75 th Percentile (14 Hours)	90 th Percentile (20 Hours)
Administration [‡]	2.81 (2.68 to 2.95)	2.70 (2.61 to 2.80)	2.59 (2.51 to 2.68)	2.43 (2.33 to 2.53)	2.26 (2.12 to 2.42)
Autonomy [‡]	3.42 (3.30 to 3.55)	3.35 (3.25 to 3.45)	3.28 (3.20 to 3.35)	3.17 (3.08 to 3.25)	3.06 (2.94 to 3.19)
Personal time [‡]	3.15 (3.02 to 3.28)	3.00 (2.91 to 3.10)	2.86 (2.78 to 2.94)	2.64 (2.55 to 2.73)	2.42 (2.28 to 2.56)
Specialty [‡]	3.29 (3.12 to 3.47)	3.23 (3.10 to 3.35)	3.16 (3.05 to 3.27)	3.06 (2.92 to 3.19)	2.96 (2.75 to 3.14)
Stress [‡]	2.29 (2.15 to 2.41)	2.34 (2.23 to 2.44)	2.40 (2.32 to 2.47)	2.48 (2.39 to 2.57)	2.56 (2.43 to 2.70)
Relations with colleagues	3.67 (3.57 to 3.77)	3.65 (3.57 to 3.72)	3.62 (3.56 to 3.69)	3.59 (3.52 to 3.66)	3.55 (3.45 to 3.67)

* Predicted scores calculated holding other independent variables (physician age, gender, race, marital status, number of children, income, ownership of practice, international medical graduate status, total hours per week working) at their weighted means.

[†] All satisfaction scales were scored positively (i.e., the higher the score, the greater the satisfaction). The stress scale was scored such that the higher the score, the greater the level of stress. Satisfaction scales (not listed) that showed no statistically significant association with time in the hospital were job, career, community, relations with patients, relations with staff, patient related issues, pay, and resources.

[‡] P value < .05.

believed that hospitalists did not affect their income.¹⁸ While it is possible that a U-shaped relationship between inpatient time and satisfaction exists, with satisfaction rising as inpatient care becomes the dominant activity, the limited number of hospitalists in the sample prevented exploration of this hypothesis. Further studies should address this point.

Although most of the predicted satisfaction domains were affected by inpatient time, one domain that we thought would be affected—overall job satisfaction—was not. However, satisfaction with one's specialty was significantly affected. How do we explain this? One explanation is that outpatient-oriented general internists who spend increasing time in the hospital remain satisfied as physicians, but frustrated with their role as general internists who must maintain mastery in both outpatient and inpatient settings. Our findings imply that as general internists increase their inpatient time, they become more dissatisfied with their role as internist than with their actual job.

We also found that burnout increased modestly but significantly as the internists spent more time in the hospital. While we cannot provide a definitive comment on the "clinical" significance of a 0.3 increase in mean burnout score (from 2.1 to 2.4), we note that the difference between a burnout score of 2 (stress without burnout) and 3 (definitely burning out) is clearly clinically important. Thus, we believe that a change in 0.3 between these 2 values also is likely to be important.

Our results should be interpreted in the context of several limitations. First, although the overall response rate we observed in this population-based national survey compares favorably with the average response rate for physician surveys,¹⁹ the response rate for general internists was somewhat lower. However, a wave analysis indicates that non-response bias may have been modest. Specifically, because there was little difference between first and last (i.e., 4th) survey mailings, it is unlikely that there would be a meaningful difference between respondents and non-respondents.¹⁶ Furthermore, the direction of the non-respondent bias, if one exists, should be considered. Non-respondents, as a group, are likely to be busier and be more stressed compared to respondents; thus, we actually may be underestimating the relationship between time spent in the hospital and worklife domains. Second, as we were interested primarily in general internists, we did not include subspecialties (e.g., rheumatology) and other primary care specialties (e.g., family medicine, pediatrics). Our analyses, therefore, may not apply to these other physician groups. Finally, while we included many potentially confounding variables in our statistical models, there may have been additional confounders not captured in our survey.

Our data imply that there may be a tension between the practice of inpatient and outpatient medicine by general internists, and suggest that fewer hospital duties may increase career satisfaction for outpatient-oriented

internists. Longitudinal studies of both hospitalist-based and outpatient-oriented internists will be needed to enrich our understanding in this important area.

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Other members of the Career Satisfaction Study Group include: Eric Williams, PhD, Department of Marketing and Management, University of Alabama, Tuscaloosa, Ala; Mark Schwartz, MD, Division of Primary Care, NYU Medical Center, NY, NY; Donald E. Pathman, MD, Department of Family Medicine, University of North Carolina, Chapel Hill, NC; John Frey, MD, and William Scheckler, MD, Department of Family Medicine, Julia E. McMurray, MD, Department of Medicine, and Jeffrey Douglas, PhD, Department of Biostatistics, University of Wisconsin–Madison, Madison, Wis; Richard Shugerman, MD, Department of Pediatrics, University of Washington, Seattle, Wash; Martha Gerrity, MD, PhD, Department of Medicine, Oregon Health Sciences University, Portland, Ore; Kathleen Nelson, Department of Pediatrics, University of Alabama, Birmingham, Ala; JudyAnn Bigby, MD, Division of General Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston, Mass; and Elnora Rhodes and David Karlson PhD, SGIM, Washington, DC.

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