# Physician Satisfaction in a Managed Care Environment

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*Background.* The professional literature suggests that changes toward the bureaucratization of medical practice have led to increasing job dissatisfaction, especially in primary care. To investigate this claim, we surveyed physicians in Dane County, Wisconsin, who practice in a bureaucratic setting. Dane County has experienced essentially a demise in independent practice, ie, most physicians practice in organizational settings where expenses and total patient income are pooled. About 85% of physicians have joined one of the six competing health maintenance organizations (HMOs).
*Methods.* In 1986 all 850 physicians in Dane County were surveyed to determine their perceptions of clinical freedom, satisfaction with income, status in their profession, autonomy, resources, and professional relations, and their overall satisfaction.
*Results.* We found that over 69% of primary care physicians were very satisfied or satisfied with their practices overall compared with 68% of physicians in all specialties. Differences between family practice and other primary care specialties were not statistically significant. Our regression analysis showed that only for satisfaction with income were responses from primary care physicians significantly different from those of physicians in surgical specialties. Perceptions of clinical autonomy and specific organizational settings were more important to predicting satisfaction. Also, age and sex contributed to differences in satisfaction with resources and status, respectively.
*Conclusions.* We conclude that satisfaction can be fairly high for primary care physicians in bureaucratic settings similar to that of Dane County.
*Key words.* Delivery of health care; group practice; family practice; prepaid private practice; HMO.
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The professional literature gives the impression, as McKinlay states, that "physicians are increasingly unhappy and disaffected."[1] McKinlay notes that "medical journals regularly contain anecdotal reports from older doctors that medicine today is not like the 'good old days.'" Although perceptions and anecdotes of increasing dissatisfaction abound, there have been few empirical studies of job satisfaction among physicians in today's environment. The limited investigations of physician satisfaction tend to support impressions that pessimism exists among physicians.

A recent American Medical Association survey of "young physicians," ie, those under 40 years of age who have been in practice 1 to 7 years, found that a substantial minority (31%) said that, given what they know now, they would not have gone to medical school, and another 9% said they were unsure.[2] In a survey of 219 academic and private practice internists associated with the Department of Medicine at the State University of New York at Buffalo, most stated that they were negative or unsure about the future of medicine.[3]

A national survey by the American College of Physicians in the spring of 1989 asked internists how satisfied they were with practice when they started, in 1985, and at the time of the survey.[4] Sixty-nine percent viewed their practice overall as satisfying. However, among fellows of the College, who tended to be older, most stated that when thinking retrospectively they thought that they were more satisfied when they began practice in 1985 than at the time of the survey. Few members (mostly those who were younger) reported that they were very satisfied at any of the three points in time. Also, the survey showed that there had been a decline in medical school graduates selecting family medicine and internal medicine, while there had been an increase or stability in the number of graduates choosing other specialties. This may reflect an increasing pessimism among primary care practitioners.

The studies discussed above raise serious concerns. Job satisfaction is important not only as a goal in itself, but for recruitment of the best persons to the field.

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Furthermore, there is preliminary evidence that physician satisfaction affects patient satisfaction.[5]

What seems to affect physician satisfaction? A number of studies dating to the 1970s and earlier suggest that practicing within large bureaucratic organizations compared with solo or small group practice adversely affects physician work satisfaction.[6–9] Involvement in prepaid care in contrast to fee-for-service is also related to lower satisfaction.[9,10] Third-party-payer controls and the growth of managed care and group practice has increased both the bureaucratization of American medicine and intrusions from administrators and malpractice litigation.[11–16]

Building on our previous work reported in *The Journal of Family Practice* in 1987,[17] in this study we examined physician satisfaction in Dane County (Madison), Wisconsin, which in 1984 experienced what was essentially the demise of independent physician practice. With the development of closed-panel HMOs, by 1986 85% of the physicians joined one of the health maintenance organizations (HMOs) where eventually total practice income and expenses were pooled. Practice in this bureaucratic setting may represent the future direction of health care in other communities.

A number of questions were examined empirically in this study of physician work satisfaction in Dane County. How satisfied were physicians practicing in this managed care setting? How does work satisfaction of primary care physicians, including family physicians, compare with that of physicians in hospital-based and referral specialties? Does satisfaction vary by age, sex, HMO, medical school faculty appointment, or private practice?

## Methods

The setting for this study is Dane County, Wisconsin. The county, which is the metropolitan area for the state's capital city of Madison, has a population of 340,000.

The medical community in Dane County may differ from most other communities because most physicians are members of group practices, part of a staff model HMO, or full-time medical school faculty. Furthermore, at the time of our survey, 40% of Dane County's population received their care through one of six HMOs. However, given the nationwide decline of solo and single-specialty, small-group practices, Dane County may be a prototype for other metropolitan areas in the future.

There were six HMOs in Dane County when we conducted our survey. The first of these was established in 1973. It is a staff-model, consumer-owned HMO with salaried physicians. In 1986 it employed 21 physicians and had 29,000 subscribers. A second staff-model HMO consists of salaried faculty at the University of Wisconsin. It employed 400 physicians and provided care for 10,000 subscribers. The University HMO represents a very small portion of medical school faculty clinical services (less than 5% of patients). The third and fourth HMOs, referred to as "Smaller Group" and "Larger Group," were composed of physicians primarily from previously established multispecialty group practices. The Smaller Group practice had 69 physicians and 19,000 subscribers. The Larger Group practice had 150 physicians in Dane County as well as another 200 physicians outside of Dane County under contract to provide care for a total of 65,000 subscribers. The fifth HMO, the Independent Practice Association (IPA), was established in 1984 to compete for patients with other HMOs. This HMO was created by physicians who were in solo and small group practices. It had 122 physicians and 24,000 subscribers. In 1987 they formally organized into a group practice and merged with the Smaller Group HMO. A sixth, very small, open-panel HMO is not included in the present study because its numbers are too small to analyze. The five HMOs have been summarized in Table 1.

Our survey targeted the 850 physicians with privileges in the five Dane County general hospitals. The survey was conducted by the University of Wisconsin Survey Research Laboratory in 1986, approximately 2½ years after the change to HMOs in Dane County. Physicians practicing exclusively at the Veterans Administration Hospital and house staff in training were excluded from the sample.

After five follow-up surveys, 545 (65%) of the physicians responded. Response rates exceeded 70% for primary care physicians, 67% for referral specialists, 60% for university-based physicians, and 54% for hospital-based specialists. The lower response rate for hospital-based physicians suggests that some caution is needed in interpreting findings for them and possibly for full-time university faculty.

Of the 545 usable responses, by self-report 152 were from physicians in the primary care specialties of family practice, internal medicine, obstetrics and gynecology, and pediatrics. Another 316 of the physicians responding reported that their practices were mainly referral-based and that they were in general surgery, psychiatry, internal medicine, obstetrics and gynecology, or one of the subspecialties. The remaining 75 respondents were hospital-based and practiced anesthesiology, emergency medicine, pathology, or radiology. About 14% of the responding physicians were female, and 57% were 46 years of age or younger.

The object of our study was to examine variables influencing six different aspects of job satisfaction. Three of these aspects were measured by single-question items

Table 1. Dane County HMOs Included in 1986 Survey

| HMO Model | Ownership | Number of Physicians | Number of Subscriber Members |
|---|---|---|---|
| IPA (closed-panel) | A joint venture among multiple physician groups and solo practitioners, an insurance carrier, and a hospital | 122 | 24,000 |
| Smaller Group | 53 physician members of a multispecialty group practice | 69 | 19,000 |
| Larger Group | 150 physician members of a multispecialty group practice | 350* | 65,000 |
| University (Staff model) | A joint venture between the clinical practice partnership of the faculty, the university hospital, and the medical school | 400 | 10,000 |
| Consumer-owned (Staff model) | Subscribers to a nonprofit cooperative | 21 | 29,000 |

**This number includes subcontracted primary care groups outside of Dane County.*
*IPA denotes Independent Practice Association.*

asking how satisfied the respondents were with the amount of income received from their practice, with their status in the medical profession, and with their current work situation. In addition, we used three scales combining multiple items to measure satisfaction with resources, autonomy, and professional relations. These scales, developed in an earlier study, are the product of principal components analysis with varimax rotation.[18] For each of these scales, Cronbach's alpha, a measure of internal consistency, is well within acceptable ranges for scaling (.76, .85, and .74, respectively).

We have also included a scale of perceived clinical freedom, which is both an independent and dependent variable in the study ($\alpha = .70$, which is within acceptable limits). The items on the clinical freedom scale were developed from open-ended interviews with physicians from a variety of specialties in Dane County and elsewhere (including officials with the American Medical Association).

To minimize missing cases, multiple-item scales were constructed by finding the mean score on all items for which a response was given, as long as at least half of the items were not missing. For most of the individual items, a 7-point Likert scale was used (from very satisfied to very dissatisfied). The exception was for items indicating perceived clinical freedom, for which a 4-point Likert scale was used.

The independent variables in the study are the respondent's perceived clinical freedom, specialty area, type of practice, age, sex, HMO affiliation, the proportion of HMO patients he or she treats, and whether he or she was either a salaried or volunteer faculty member at the University of Wisconsin Medical School. Ordinary least squares regression (with listwise deletion of missing data) was used to predict levels of satisfaction. For the single item dependent variables (overall satisfaction and satisfaction with status) with ordinal scales ranging from 1 to 4 or 1 to 7, we also used ordered probits to analyze the data. However, because the probit results differed little from those obtained with ordinary least squares, we report the ordinary least squares results only.

We measured the type of practice with dummy variables for solo practice and group practice. (For example, the dummy variable for solo practice receives a value of 1 if the physician is in solo practice and 0 otherwise.) These dummy variables capture the effect of being in group practice or solo practice compared to practicing in a hospital. In our sample, this latter category was quite large because it not only included anesthesiologists, radiologists, pathologists, and emergency department physicians, but also members of the medical school faculty who were practicing out of the university hospital and did not have a solo or group practice. In some regressions, we also included a dummy variable for practices with six or fewer physicians (combining solo and small group practices). In view of previous studies[7–9] showing that organization size and organization type affect physician satisfaction, we included these organization variables as controls. Slightly more than 50% of our sample was in a group practice. Only 7.6% of our sample was in solo practice and fewer than 2% was in group practice with two to six physicians.

We included an item asking about the proportion of HMO patients treated because most physicians in Dane County treat both fee-for-service and HMO patients. The exceptions are physicians in the Consumer-owned HMO, who treat only HMO patients, and physicians not affiliated with an HMO. Our survey results showed that the median volume of HMO patients per physician in Dane County was roughly 25% in 1986. The survey item measuring this volume included five response categories (less than 10%, 10% to 25%, 26% to 50%, etc). We

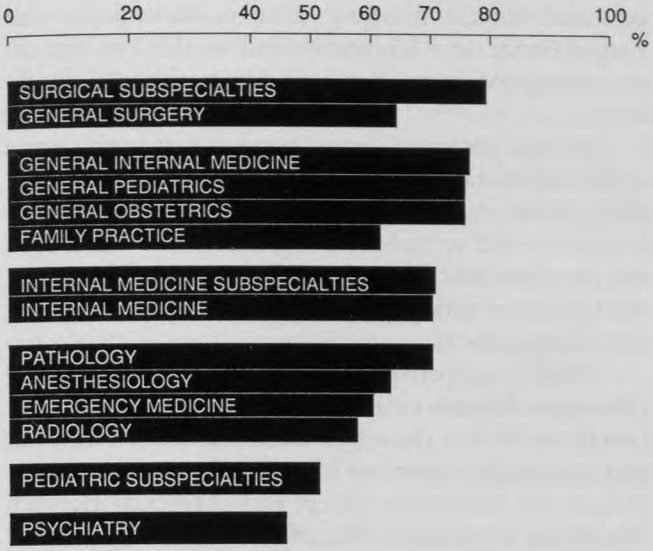


Figure 1. Percentage of physicians by specialty who are satisfied with their work situation.

found that by recoding this variable into a dummy for 26% or more HMO patients, we increased the explanatory power of this variable.

Although the independent variables in our analysis have significant correlations with each other, tolerance levels indicate that multicollinearity is not a problem. In virtually all instances, 40% or more of the variance in any one of the independent variables remains unexplained when this variable is regressed on all of the other independent variables. However, the tolerance level is only 20% for the paid faculty variable and 23% for the group practice variable. Even these low tolerance levels permit reasonably stable estimates.

## Results

In our Dane County sample of physicians, fully 68% indicated that they were satisfied or very satisfied with their jobs (the top two rankings on our 7-point Likert scale). Only 8% of the respondents indicated some level of dissatisfaction. Furthermore, Figure 1 shows that psychiatry was the only specialty area in which less than a majority of physicians were either satisfied or very satisfied.

Without controls, the comparison of specialty areas was not very informative about causes of satisfaction or dissatisfaction. To remedy this situation, we incorporated age, sex, HMO affiliation, medical school affiliation, perceived clinical freedom, and practice type as control variables to obtain the regressions shown in Table 2. Specialties were consolidated into six areas so

Table 2. Regression Analysis of Clinical Freedom and Satisfaction

| Control Variables | Perception of Clinical Freedom (n = 482) | Satisfaction with: Income (n = 471) | Status in Profession (n = 470) | Autonomy (n = 480) | Resources (n = 464) | Professional Relations (n = 465) | Overall Satisfaction (n = 472) |
|---|---|---|---|---|---|---|---|
| Age | | | | | .14‡ | | |
| Sex (Male) | | | .09* | | | | |
| Specialty (compared with surgery) | | | | | | | |
| Primary care | | −.13* | | | | | |
| Internal medicine subspecialties | | −.17† | −.12* | | | | |
| Pediatric subspecialties | | −.14† | | | | | |
| Psychiatry | −.10* | −.21‡ | | −.10* | | | −.15† |
| Hospital based | | | −.12* | | −.10* | −.14† | |
| Being in an HMO | | | | | | | |
| IPA | −.17* | | .16* | | .16* | | |
| Smaller Group | −.12* | −.33‡ | | | .10* | | −.16† |
| Larger Group | | | .19* | .22‡ | .27‡ | .28‡ | .16* |
| Consumer | −.16† | .13* | | | | | |
| University | | | | | | | |
| >25% HMO patients | −.13† | | | −.10* | | | |
| Medical school affiliation | | | | | | | |
| Paid faculty | | | .24* | | | | |
| Voluntary faculty | | | .17* | .12* | | | |
| Perceived clinical freedom | — | .13‡ | .20‡ | .45‡ | .32‡ | .27‡ | .18‡ |
| Practice type | | | | | | | |
| Solo | | | | | | | |
| Group | .24† | | | | | | |
| $R^2$ (adjusted) | .07 | .22 | .10 | .31 | .29 | .17 | .12 |

*.05 significance level.
†.01 significance level.
‡.001 significance level.

that the respective subsamples would be large enough to make meaningful comparisons. The difference between family practice and all other primary care fields was not statistically significant. Dummy variables have been entered for primary care physicians (n = 168), hospital-based physicians (n = 78), physicians in medical subspecialties (n = 124), physicians in pediatric specialties (n = 42), and psychiatrists (n = 37). These specialists were compared with general surgeons and surgical subspecialists (n = 96), who Mawardi, in a previous survey, found to be most satisfied.[19]

Contrary to Mawardi's findings, the results in Table 2 show that income is the only dimension on which choice of surgery as a specialty was associated with increased satisfaction relative to other specialty areas. This finding (only hospital-based physicians were not significantly different from surgeons with respect to income) was not very surprising given the higher income of surgeons and hospital-based specialists.

On the whole, the effects of specialty on job satisfaction were not statistically significant. However, the regressions in Table 2 showed that after controlling for the variables shown in this table, psychiatrists were significantly less satisfied than surgeons with respect to income, autonomy, and their careers overall. Hospital-based physicians were significantly less satisfied than surgeons with respect to resources, status, and professional relations. Also, physicians in internal medicine subspecialties were significantly less satisfied than surgeons with respect to status in the profession. These differences remain significant when the comparison group was expanded to include all specialties that were not statistically significant in the original analysis shown in Table 2.

Both volunteer and salaried faculty members indicated more satisfaction with their status in the profession. These results probably reflect the perceived prestige of a medical school appointment.

The positive coefficient for age may signify that older physicians recognize the growth of technical and other resources during the years that they have been in practice. Status in the profession was the only respect in which women were significantly less satisfied than men when controlling for other causal influences of job satisfaction.

Perceived clinical freedom was a strong and positive predictor of job satisfaction, regardless of the dimension of satisfaction being predicted. Moreover, the first equation in Table 2 revealed that having 26% or more HMO patients was associated with a moderate but statistically significant reduction in perceived clinical freedom. Controlling for this effect, affiliation with the IPA, the Smaller Group, and Consumer-owned HMOs was associated with a further, although moderate, reduction in perceived clinical freedom. (The coefficients for the Larger Group and University staff model had the expected negative signs, but were not statistically significant.)

Because perceived clinical freedom was both a cause of job satisfaction and an effect of some of the other independent variables, we excluded perceived clinical freedom from a second set of regressions (not shown) to measure the total effects of the other variables. However, the significant variables were virtually identical in both sets of regressions.

Finally, compared with physicians not in an HMO (the omitted dummy variable in our analysis), the Larger Group model was the only HMO that had a consistent and statistically significant effect on the various dimensions of job satisfaction (except with respect to income). The strong and positive effect of the Larger Group model was consistent with its success relative to other HMOs in terms of growth in patient volume. One other finding was that, compared with physicians not affiliated with an HMO, IPA membership was associated with greater satisfaction with status in the profession and greater satisfaction with resources.

Although HMO affiliation had negative effects on perceived clinical freedom, only affiliation with the Smaller Group model had negative effects on the work satisfaction of Dane County physicians. Controlling for other influences, physicians in this HMO had less satisfaction with regard to income and less overall satisfaction. This result was not surprising in view of the poor economic performance of the Smaller Group model and its subsequent merger with the IPA. The only effect of the percentage of HMO patients on satisfaction was with respect to autonomy, in which case there was a moderately negative but statistically significant effect.

Our results also showed that neither solo nor group practice was associated with job satisfaction. However, group practice, when compared with hospital practice, had a relatively strong and positive effect on perceived clinical freedom (see the first column of Table 2). In a second set of regressions (not shown), a dummy variable for practices with six or fewer physicians did not have a statistically significant effect on either satisfaction or perceived autonomy (the solo and group practice variables were omitted from this latter regression to eliminate multicollinearity).

## Discussion

This survey found that 69% of the primary care physicians in Dane County were very satisfied or satisfied with

their work situation. Only 8% were dissatisfied or very dissatisfied, and the remaining 24% were moderately satisfied or neutral. While there appeared to be a somewhat lower percentage of satisfied family practice physicians than other primary care specialists and surgical specialists (Figure 1), the differences were not statistically significant (chi-square with Yates' correction 2.29, 1 *df*, $P = .13$).

Regarding the implications of these findings, the half-full or half-empty argument might be used. We view our results as encouraging. Primary care physicians were less satisfied with their income than surgical specialists, but primary care physicians were as satisfied with other facets of their practices as surgeons, and more satisfied than practitioners in some of the other specialties in this managed care setting.

Being in group and employed practices, most Dane County physicians practice in structured settings. Physicians in the IPA who have had to change the most reported less clinical autonomy than those not in an HMO, but in all other respects shown in Table 2 they were at least as, or more, satisfied than those not in an HMO. Indeed, subsequent to our survey, the IPA physicians organized into a group that has now pooled income and expenses for all patients.

As reported elsewhere,[20] in a survey of Dane County physician perceptions of HMO development before and after its implementation, physicians' expectations were found to be more negative than their experiences. Perhaps some of the surveys referenced in this paper were actually reporting physicians' fears for the future. The experience from Dane County suggests that many of these fears may be unfounded. Indeed, our previous research indicated that primary care physicians reacted more favorably to the change to HMO practice than did referral specialists. This may have been because primary care physicians gained more influence over referral specialists by negotiating HMO reimbursement contracts and obtaining greater control over referrals.[20]

It is important to note that Dane County HMOs were organized and controlled by the physicians themselves. As Barr and Steinberg[21] found, physician participation in organizational decision making is important to satisfaction. Our findings suggest that the specific organization and its management and success are very important to physician satisfaction.

The role of primary care and the primary physician will continue to be central to the success of managed care. As traditional fee-for-service and indemnity medical insurance wanes in the 1990s, the role of primary care and family practice physicians may be strengthened if, as has happened in Dane County, primary care physicians gain more control over patient referrals and more influence in negotiating the reimbursement rates of referral specialists.[21] Furthermore, the implementation of the resource-based relative value scale (RBRVS) by the federal government should help to close the income satisfaction gap that exists between primary care physicians and surgical and other specialists.

This study suggests that it is possible for physicians to be satisfied with various aspects of their practice in a managed care environment. It will be interesting to see whether similar experiences and the reduced income differential promised by RBRVS help reverse the unfortunate recent decline in the resident match in family practice and internal medicine.

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