Primary Care Physicians' Experience with Disease Management Programs

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OBJECTIVE: **To examine primary care physicians' perceptions of how disease management programs affect their practices, their relationships with their patients, and overall patient care.**

DESIGN: **Cross-sectional mailed survey.**

SETTING: **The 13 largest urban counties in California.**

PARTICIPANTS: **General internists, general pediatricians, and family physicians.**

MEASUREMENTS AND MAIN RESULTS: **Physicians' self-report of the effects of disease management programs on quality of patient care and their own practices. Respondents included 538 (76%) of 708 physicians: 183 (34%) internists, 199 (38%) family practitioners, and 156 (29%) pediatricians. Disease management programs were available to 285 (53%) physicians; 178 had direct experience with the programs. Three quarters of the 178 physicians believed that disease management programs increased the overall quality of patient care and the quality of care for the targeted disease. Eighty-seven percent continued to provide primary care for their patients in these programs, and 70% reported participating in major patient care decisions. Ninety-one percent reported that the programs had no effect on their income, decreased (38%) or had no effect (48%) on their workload, and increased (48%) their practice satisfaction.**

CONCLUSIONS: **Practicing primary care physicians have generally favorable perceptions of the effect of voluntary, primary care-inclusive, disease management programs on their patients and on their own practice satisfaction.**

KEY WORDS: **disease management programs; primary care physicians; quality of care.**
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One approach to improving care for patients with chronic medical conditions has been the development of disease management programs. Disease management programs are structured packages of care for patients with a specified disease, often combining medical care with case management and health education services provided by nurses and other personnel.[1] Disease management programs have been promoted as a strategy to simultaneously improve the quality and reduce the costs of care. Early studies of disease management programs for conditions such as congestive heart failure demonstrated both enhancement of clinical outcomes and reduced rates of hospitalization.[2–6]

Much of the recent enthusiasm for disease management programs has come from pharmaceutical companies eager to identify greater numbers of undertreated patients and managed care organizations that have proprietary interests in marketing these programs.[1,7–9] Some managed care plans now separate payment for specified chronic illnesses from their primary care contracts, delegating care for these patients to specialist-run disease management programs.[10] This approach to disease management has been criticized as potentially leading to fragmentation of care if patients with multiple chronic diseases are treated in separate disease-specific programs, forgoing a more comprehensive and integrated model of care from a primary care physician.[11] Concerns have also been raised about the potential loss of clinical skills for primary care physicians who reduce their participation in the care of patients with chronic illness, as well as the possible deleterious effect on the primary care physician-patient relationship if primary care physicians no longer deliver comprehensive care.[12]

Although many articles in both trade publications and professional journals have touted the benefits of disease management programs (based on evaluations conducted with varying degrees of scientific rigor), very little is known about the extent to which these programs are actually entering mainstream medical practice or how practicing primary care physicians view their advent. We therefore surveyed primary care physicians in California to examine their perceptions of how disease management programs are affecting clinical care, their own practices, and the quality of their relationship with their patients.

METHODS

In 1998 we mailed self-administered questionnaires to primary care physicians practicing in the 13 largest urban counties in California. The survey was conducted as part

of a larger study examining a variety of issues related to trends in managed care.[13,14] The study counties contained 79% of California's practicing primary care physicians and 78% of the state's population. Study physicians were identified from the American Medical Association's Physician Masterfile. They were eligible for inclusion if they were active in patient care, were not currently in training, and reported a primary specialty of family medicine, general practice, general internal medicine, or general pediatrics.

The study physicians were initially selected and surveyed in 1996 using a probability sample stratified by county and by physician race/ethnicity with an oversampling of nonwhite physicians. Details of the sample are given in a previous report.[13] The sampling fractions varied by county depending on the number of primary care physicians in the county, but a minimum of 100 and a maximum of 200 physicians were selected in each county. Physicians whom we identified as having retired, moved out of state, died, or who indicated a main practice specialty other than primary care were considered ineligible and were excluded from the survey. In the original 1996 sample, there were 1,069 eligible primary care physicians with known addresses in the thirteen counties. We obtained completed responses from 759 (71%) physicians in 1996. In 1998 we resurveyed all physicians who responded to the 1996 survey. Fifty-one physicians became ineligible between the time of the two surveys, leaving 708 physicians eligible for follow-up in 1998. Multiple attempts were made to contact by mail, by telephone, or in person physicians who did not respond to the 1998 survey.

The Questionnaire

The questionnaire defined disease management programs as "packages of care for a particular disease, usually offered by managed care organizations." Physicians were asked if disease management programs were available to them, and if so, whether they were required to turn over the care of their patients to the disease management programs. Physicians were not asked to describe the specifics of the disease management programs to which they were exposed. Those physicians who had experience with disease management programs (defined as having at least one patient enrolled in a disease management program) then used a 5-point Likert scale, ranging from greatly increased to greatly decreased, to rate the effect of disease management programs on several aspects of patient care. Specifically, they rated the impact of disease management programs on overall quality of care, quality of care for the targeted disease, and patient satisfaction. They were also asked if, in their experience, disease management programs reduced hospital admissions, fragmented patient care, or resulted in fewer tests and procedures for patients. If so, they were asked whether these practice differences compromised, improved, or had no impact on the quality of care. In addition, using a 4-point Likert scale, ranging from strongly agree to strongly disagree, the physicians indicated their degree of agreement with statements about the effect of disease management programs on the physician-patient relationship.

A second component of the questionnaire investigated the impact of disease management programs on the practices of primary care physicians. Physicians who had experience with disease management programs were asked to rate on a 5-point Likert scale the impact of disease management programs on their income, workload, and practice satisfaction. They used the same scale to rate the impact of disease management programs on the quality of their relationship with their patients. The questionnaire also included items about the characteristics of the physicians' practices, the numbers and types of patients treated, and demographic characteristics of the physicians.

Statistical Analysis

For the purposes of simplifying the presentation, responses were collapsed to directional categories of agreement or change. All descriptive results reported were weighted to be generalizable to the overall population of primary care physicians in the 13 study counties. Results were weighted by the inverse of the product of the sampling fraction and the participation rate to account for oversampling of nonwhite physicians and differences in response rates among sampling strata. Statistical analyses were performed using χ^2 tests for bivariate comparisons of categorical data.

RESULTS

Completed questionnaires were returned by 538 (76%) of the 708 physicians eligible for the 1998 survey. Family physicians constituted 37% (n = 199) of the respondents, internists were 34% (n = 183), and pediatricians 29% (n = 156). Non-respondents did not differ from respondents by demographic characteristics or specialty. As expected with our sampling design, African Americans and Latinos were over-represented relative to their proportion of the physicians in the specialties studied. Forty-four percent of the respondents identified themselves as white, 27% as Asian, 18% as Latino, 10% as African-American, and 2% as other. Thirty-five percent of the respondents were solo practitioners, 45% were in office-based group practices, and 20% worked for a group or staff model HMOs. Thirty-five percent of physicians reported that 75% or more of their patients were in HMO plans; 34% of physicians had between 40% to 74% of their patients in HMOs.

Two hundred eighty-five (53%) of responding primary care physicians reported having disease management programs available to them. More pediatricians (60%) had programs available, compared to internists (56%) and family physicians (44%) (P = .005). Physicians employed in group or staff model HMOs (78%) were significantly more likely to have disease management programs available

Table 1. Primary Care Physicians' Perceptions of the Effect of Disease Management Programs on Quality of Care, Patient Satisfaction, and Primary Care Practices (*N* = 178)

DMP* Impact On:	Increased, %	No Change, %	Decreased, %
Overall quality of patient care	73	24	3
Quality of care of targeted disease	75	21	4
Patient satisfaction	65	30	5
PCP† income	2	91	7
PCP workload	14	48	38
PCP practice satisfaction	48	46	6
Quality of PCP relationship with patient	12	78	10

* *DMP, disease management program.*
† *PCP, primary care physician.*

than those who worked in a single specialty practice (51%) or in solo practice (49%) ($P < .0001$). One hundred seventy-eight physicians had at least one patient enrolled in a disease management program, and so were considered to have experience with these programs.

Characteristics of Available Disease Management Programs

The most common disease management programs were for diabetes (available to 40% of the 538 physicians surveyed), asthma (available to 38%), congestive heart failure (available to 22%), and AIDS (16%). Most programs were voluntary; only 12% percent of physicians with disease management programs available were required to use them for eligible patients. Of those primary care physicians who had disease management programs available to them and were not required to use them, 57% had patients enrolled in a program, demonstrating substantial voluntary participation. Most primary care physicians continued to be involved in the care of their patients; 87% of physicians experienced with disease management programs reported that they "always" provided ongoing primary care to their patients in these programs, 11% did so "sometimes," and 2% "never" did so.

Physician Perceptions of Disease Management Programs

Most primary care physicians with experience with disease management programs (n = 178) believed that disease management programs either increased (73%) or did not affect (24%) the overall quality of patient care (Table 1). The majority (75%) also believed that disease management programs improved the quality of care for the specific disease targeted by the program. Patient satisfaction was also largely perceived as increasing (65%) or not changing (30%) as a result of disease management programs.

When asked about the clinical effects of disease management programs, 79% of physicians who had experience with these programs believed that they resulted in fewer hospital admissions and only 2% reported that this compromised the quality of care (Table 2). Forty-three percent of physicians believed that disease management programs resulted in increased fragmentation of care; however, even among these physicians few felt that this compromised care. Most physicians (60%) did not perceive that the programs resulted in patients' undergoing fewer tests or procedures; those who did found this change to have largely a neutral or beneficial effect on the quality of care (Table 2).

The majority of primary care physicians with experience with disease management programs reported that disease management programs had no effect on their income (91%), decreased (38%) or had no effect (48%) on their workload, and increased their practice satisfaction (48%) (Table 1). Most primary care physicians reported that disease management programs did not change the quality of their relationships with patients (78%); the number of physicians reporting a decrease in the quality of the relationship (10%) approximately equaled the number who perceived that the programs improved their relationship (12%).

Over three quarters of primary care physicians with experience with disease management programs disagreed that "disease management programs upset my patients

Table 2. Primary Care Physicians' Perceptions of the Effect of Disease Management Programs on Patient Care (*N* = 178)

Response to question, "Do disease management programs result in …"	No, %	Yes, and Compromises Quality of Care, %	Yes, and Has No Impact on Quality of Care, %	Yes, and Improves Quality of Care, %
Fewer hospital admissions?	21	2	14	63
Fragmentation in patient care?	57	7	21	15
Fewer tests and procedures?	60	3	15	22

because they would prefer that I take care of them," and that the programs "undermine my patient's confidence in me" (79% and 86%, respectively) (Table 3). Seventy percent agreed that disease management programs "allow me to participate in the major decisions about the management of my patients."

DISCUSSION

One half of primary care physicians in urban California in 1998 had disease management programs available to patients in their practice. Most primary care physicians with direct experience of disease management programs have favorable views of these programs. Despite 43% of primary care physicians who had experience with these programs agreeing that disease management programs increase the fragmentation of patient care, a substantial majority of physicians nonetheless perceive them as improving the quality of care for the targeted condition and the overall quality of care.

Primary care physicians in California appear to be encountering disease management programs that are promoting continued involvement of the primary care physician in the care of enrolled patients and allow patient enrollment to occur on a voluntary basis. In our study, almost all primary care physicians continued to provide primary care to their patients enrolled in disease management programs. Seventy percent believed that they were able to participate in major decisions about the management of their patients. This may explain why most physicians noted no change in the quality of their relationship with their patients. However, about one in five physicians agreed that "disease management programs upset their patients because they would prefer that their primary physician take care of them." This concern merits study from the patients' perspective. Disease management programs in which the primary physician does not feel that he or she is able to participate in the major patient care decisions (as reported by 30% of physicians in our study) also warrant additional scrutiny of their effect on patient care and patient satisfaction.

The favorable perceptions of the clinical impact of disease management programs that we detected arise in the context of the largely neutral or beneficial perceived effects of these programs on primary care physicians' practices. Current disease management programs in California appear to often decrease physician workload without decreasing income. The increase in primary care physician practice satisfaction that we report should be interpreted in this context as well.

Our results suggest that rather than being threatened by the development of disease management programs, primary care physicians in California appear to welcome these programs as a beneficial influence on patient care and primary care practice. Recent studies have shown that many primary care physicians feel pressured by managed care plans to expand their scope of practice beyond their level of comfort, such as by directly managing patients with complex chronic diseases rather than referring these patients for specialty consultation.[15] Faced with this pressure, disease management programs may be perceived as a desirable strategy for assisting busy primary care physicians to care for patients who require considerable attention and time to effectively address their chronic care needs.

Our study has several limitations. We studied physicians in one state. Although California is the most populous state in the United States and is considered a leader in managed care trends, our findings may not reflect the experiences and attitudes of primary care physicians in other states. Our survey was conducted relatively recently (1998), yet physician attitudes may change as disease management programs evolve. Our study examined physician perceptions. We did not directly measure the performance of disease management programs on patient outcomes and related items. While our results are dependent on physician self-report, we believe that primary care physicians are well situated to report on issues that affect their own practices. We chose to focus on physicians who had direct experience with disease management programs defined as having at least one patient enrolled in such a program. The perceptions of physicians without direct experience might be less favorable, if many of these physicians have refrained from voluntarily referring patients to available disease management programs. In addition, the physicians we surveyed had responded to a prior physician survey; their attitudes may differ from physicians who did not resond. Last, we used a broad definition of disease management programs and did not obtain detailed information about their operations, including the specifics of how they interfaced with the primary physician, or the magnitude and types of services provided.

Table 3. Primary Care Physicians' Perceptions of the Effect of Disease Management Programs on the Physician-patient Relationship (*N* = 178)

Response to statement: "Disease management programs ..."	Strongly Agree, %	Somewhat Agree, %	Somewhat Disagree, %	Strongly Disagree, %
Upset my patients because they would prefer that I take care of them.	4	17	56	23
Undermine my patients' confidence in me.	5	9	53	33
Allow me to participate in major decisions about the management of my patients.	21	49	23	7

Hence, we are able to provide only an overview of physician attitudes toward existing programs and cannot distinguish specific features that physicians may find more or less favorable for patient care or their own practice satisfaction.

Primary care physicians are working harder than ever.[14] The current environment may be forcing many physicians to increase the scope of their practices beyond their level of comfort.[15] In this context, disease management programs that are voluntary, allow for continued primary care physician participation, and reduce physician workload but not income are clearly welcome. It remains to be determined whether disease management programs will retain the features that primary care physicians find attractive as these programs become more widespread and demands for cost savings intensify.

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