

Physician Perspectives of Nurse Care Management Located in Primary Care Clinics

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Abstract:

Objective: Care management has been suggested as a method to improve management of chronic disease, but its success can depend on the involvement of primary care physicians, especially with referral to care management. Our objective was to identify and characterize physicians' perspectives of care management, to gain insight into the rationale for referral to care management.

Design: This was a qualitative and quantitative study of physicians' reported opinions and understanding of care management.

Setting: The study took place in primary care clinics within an integrated delivery system.

Subjects: Nineteen primary care physicians with varying levels of involvement with care management participated in the study.

Measures: We performed a qualitative and quantitative analysis of semi-structured interviews. For the qualitative analysis, interviews were conducted and analyzed using Grounded Theory to identify themes and relationships among themes. For the quantitative analysis, we separately analyzed the transcribed interviews by categorizing and quantifying responses, and then computing Pearson correlation coefficients between intra- and inter-topic responses.

Results: Four referral patterns emerged that were related to physicians' recognition of care managers' abilities, and how care managers were connected to their practice. Physicians reported patient compliance, time constraints and the specialized knowledge and skills of the care manager as reasons to refer to care management.

Conclusions: Physicians have varying reasons for referring patients to care management, among which are their perceptions of the care manager competencies. Results from this study can be used to more effectively implement similar models of chronic disease management, where physician participation is a critical component for successful implementation.

Background:

The current health care system in the United States has a significant need to improve quality of care. An area of significant concern in improving clinical quality is chronic disease management. Over half of patients with various chronic diseases, including diabetes, hypertension, congestive heart failure, and depression, are managed inadequately.¹ Nearly half of the American population lives with some type of chronic disease,² and their health care costs account for three-fourths of US health care expenditures.³ As a result, the Institute of Medicine (IOM) has recommended that initial steps in improving health care quality be focused on chronic disease.⁴

Effective chronic disease management is difficult, in part because the current health care system is designed to respond to acute and urgent problems rather than meet the needs of the chronically ill.⁴ There are, however, organized initiatives that demonstrate improved chronic disease care.⁵⁻⁹ Two major initiatives are disease management and the chronic care model.^{5, 9} Disease management initiatives focus on identifying, monitoring and communicating with patients in order to improve their self-management. Typically, this is done through telephone calls, and may involve status reporting to the patient's primary care physician.^{5, 10} The chronic care model (CCM) identifies 6 interrelated components that can be implemented to improve chronic disease care. The CCM shares many of the objectives of disease management, but one component, delivery system redesign, specifically focuses on reorganizing physician practices to better improve chronic disease management. Typically, this

reorganization includes a nurse care manager, who, like disease management case managers, communicates with the patient directly to provide education and self-management support.¹¹ Unlike disease management initiatives, this care manager is located at the site of care, and works directly with the physician as a member of a health care team in the management of the patient. CCM initiatives offer improvement over the disease management approach by involving physicians, who have direct personal knowledge of their patients, and are patients' most trusted source of health information.¹²

Because of this focus on the physician practice, physician involvement is critical to the success of CCM initiatives.¹³ Practice changes are more likely to be effective if physicians perceive the changes as beneficial, and are involved in the implementation of such efforts.^{10, 14-16} For example, our program, located at Intermountain Healthcare in Salt Lake City, adapts the CCM by providing technology-assisted care management for patients with a number of conditions. In this program, as in others, referral to care management is determined by physicians who participate in the care management program because they perceive it as beneficial.¹⁷ Because the implementation of this and similar models are directly dependent on physician involvement, it is important to understand physician perspectives of both the value and the use of various CCM implementations. Understanding such physician perspectives may help identify barriers to the successful collaboration between members of a primary care team, that could inhibit their effectiveness. Identifying how physicians refer

patients to care management could also facilitate the development of decision-making models to guide the referral decision process.

Research is limited on physician attitudes or perspectives within chronic care management interventions that follow the CCM. Schroeder et al. interviewed both care managers and patients, and found a high level of satisfaction,¹⁸ and Bodenheimer et al. interviewed leaders of physician organizations to identify general facilitators and barriers.¹³ Schraeder et al. indicated that physician satisfaction with clinic-based care management improved over time, but no data were published,¹⁶ and no other studies were located that address physician views of clinic-based care managers. In this paper, we present results of a qualitative analysis of physician perspectives of care management within an adaptation of the Chronic Care Model.

Methods

Setting

Intermountain Healthcare is an integrated delivery network consisting of 20 hospitals and over 1200 employed and affiliated physicians in Utah and Idaho. The 450 physicians employed by IHC work in one of 92 clinics and provide more than three million outpatient visits each year.

One generalist care manager is located in each of seven of these Intermountain-owned primary care clinics that serve adult patients with a diverse spectrum of diagnoses and needs. Each care manager serves as a resource to approximately 8 primary care physicians and has an active panel of between 350

and 500 patients. Patients are referred to care management by physicians, based on the perceived need by the physician. Specific chronic diseases, especially diabetes and depression, are identified in over 80% of encounters. Further details of the care management intervention, and its impact on patient and financial outcomes, is discussed elsewhere.^{17, 19}

Subjects

We interviewed physicians within care-managed clinics for perspectives on the care management service. In all, 25 participants were randomly selected from among all physicians who had referred patients to a care manager within the six months prior to the interview period (40 total physicians). Selected physicians were then contacted via telephone and requested to participate in the survey. Nineteen physicians (~80%) participated, of whom 13 frequently referred patients to care management (>5% of patient visits), 3 referred moderately (1-5%), and 3 referred rarely (<1%).

Data Collection

Semi-structured, in-depth, individual interviews were performed by three trained interviewers, who asked physicians open-ended questions regarding physicians understanding of, involvement with, and opinion of the care management program. Semi-structured interviews were chosen in part because they allowed us to see a broad range of potential answers, that we may not have obtained if we had opted for methods that were more consensus-focused, such as focus groups. Questions were created that queried multiple aspects of satisfaction and use, such as perceived impact of care management on patients

and physicians and rationale for referring patients to care management (see Table 1). Finally, interviewers queried for both problems and recommendations for the program, and requested additional comments. The interviewers asked questions generally, and then guided physicians to talk about present and past experiences with care managers. Specific examples of experiences with referrals were solicited. Interviews were audio-recorded and then transcribed for further analysis.

Analysis

Two analyses were performed with the interview data. First, a qualitative analysis was performed to identify themes and relationships among themes, following principles of grounded theory.²⁰ Grounded theory is a process by which researchers can gather data and then systematically generate and develop theory directly from the data. It meshes the coding of data and development of theoretical ideas through constant comparison of data and ideas, rather than developing theories and then explicitly testing them with data. The goal of this analysis was to identify why physicians refer patients to care management, by exploring “what, how and why;”²¹ specifically, how physicians use care management, what they find useful about the program, and why they feel patients may benefit from it. This analysis was performed by the researchers who interviewed the physicians, using both the text of transcribed interviews and notes collected during and following interviews. The data was analyzed by identifying concepts and relationships among concepts to generate themes. Themes that emerged were then coded and checked against data to verify and

refine the themes, and to identify relationships among themes. This identification and verification process proceeded iteratively, until the analysis reached a point of theoretical saturation.²¹

The second analysis was a quantitative analysis of the interview data, measuring the various responses to questions in interviews, and correlations among responses. The goal of this analysis was to quantitatively measure physician responses, identify patterns among the physicians and responses, and compare these results to the results of the grounded theory analysis. For this quantitative analysis, two researchers who were not involved in the physician interviews or grounded theory analysis reviewed the text of the transcribed interviews to identify categorical responses among each physician. The researchers identified seven questions where responses could be categorized among 18 subjects; for one subject, who had minimal exposure to the care manager service, no responses could be categorized. For each question, multiple response categories were identified (see Table 1). The researchers then extracted the questions and responses from the transcribed interviews, and analyzed each question and its responses separately. For each physician, the researchers identified which (if any) of the response categories were given using a Delphi technique. That is, researchers independently determined which categories were represented in each response, and then the separate analyses were compared. If there was disagreement in whether a response matched a category, the response was discussed and reanalyzed. In case of disagreement after the second review, a coin-flip was used to determine whether the category

was assigned to the response for that physician. For one question (“What is your opinion of the care manager service?”), responses were assigned to a single category. For the other 6 questions, each response could be assigned to multiple response categories; e.g., a physician could respond to the question about impact on patients that care management increases both patient outcomes and satisfaction. Once all responses were assigned, Pearson product-moment correlation coefficients were then computed between each response within each question topic and across all questions to identify relationships between responses. Correlations with values above 0.5, which can be interpreted as large correlations,²² were used to identify these relationships.

Results

Qualitative Analysis

The core concept that emerged from the qualitative analysis was that physician referral to care management was based on the physician’s perceived ability to manage the patient. Specifically, this judgment was whether the physician or his immediate medical staff (e.g., medical assistants) had the time, skills and knowledge to adequately provide for the needs and demands of the patient. Time limitation was the primary reason for referral, but a strong secondary reason was the specialized knowledge and skills of the care manager. Two additional supporting concepts were identified as influencing physician referral: the patient’s ability or willingness to self-manage, and the judgment of the care manager’s ability to help the patient (see Table 2). Physicians chose not to refer patients who they judged were either capable of managing their

conditions themselves, or could not be helped sufficiently by the care manager. Patient characteristics that affected self-management were having complex medical and/or psychosocial problems, having high-risk diseases with models for care management (e.g., diabetes, depression), inability to afford medication or other treatment needs, or lacking understanding or skills to manage their diseases. The care manager roles and competencies identified were assisting patients to obtain medications, coordinating with outside resources for patient care, educating patients about disease management, supporting patients in disease management, and collaborating with physicians to achieve continuity of care.

Four referral patterns among physicians also emerged from the qualitative analysis. These patterns were related to how the physicians recognized specialized skills of care managers, and how they connected the care manager service to their practice (Figure 1). Surface Coordinators were not as invested in the care manager service or motivated to use the service in broad ways. Rather, physicians who fit this referring pattern appeared to simply use care managers to complete tasks they did not want to do themselves or did not believe they had the time to do, as in the following quote: “I was running out of time and I needed about 50 things more done so I sent them to the care manager and gave her the list.” Surface Collaborators demonstrated substantial investment in the care manager service and generally in the idea or philosophy of care management, but had difficulty trusting their care managers to be more intimately involved, e.g. “... I’ve been a little reluctant to develop the relationship that needs to be there in

order for her to be a vital part of my team.” Deep Coordinators had a greater recognition of care managers’ specialized skills and knowledge that could benefit their patients in ways they may not be equipped to do well themselves; however, they did not appear to involve the care managers much in the ongoing care of their patients, as in “I see the care manager as kind of an extension to myself in doing things that either I don’t have the expertise or don’t have the time to be able to do. Such as diabetes education, ... diet education, obtaining prescriptions for patients ...” Deep Coordinators seemed to limit care managers to these defined and discrete – though necessary and supplementary – tasks. Finally, Deep Collaborators saw their care managers as having specialized skills and knowledge and to see care manager services as intimately connected to their work as physicians. These physicians tended to involve care managers more in the ongoing care of their patients, to use care managers in monitoring the self-care efforts of patients, and to seek counsel or advice from care managers in the treatment of their patients. The following is an example of a Deep Collaborator: “I would consider the relationship kind of like a, uh, a co-manager of the patient, essentially. I don’t know a better word for it. I respect the opinion and the experience of the care manager and actually will make a lot of my therapeutic adjustments based on the recommendation of the care manager.”

Quantitative Analysis

The second analysis quantitatively measured physician responses regarding specific topics. We report the responses and correlations among the

responses for each topic separately, and then identify correlations among responses across topics.

Understanding of care manager role. When asked about their understanding of the care manager role, most physicians (12) indicated patient education, followed by assisting with difficult patients (11), or coordinating care (11). Less than half of physicians (8) described the care manager role as including patient follow-up. There was no observable correlation among these responses.

Opinion of care manager service. Twelve physicians gave assessments of care management, ranging from neutral (e.g., “It’s great idea”, but expressed reservations), positive (“I think it’s good), or strongly positive (“almost indispensable”). Five physicians had strongly positive responses, six had positive responses, and one physician was neutral.

Impact on patients. Fifteen physicians specified a perceived impact of care management on patients. The predominant impacts were improved patient understanding (9), improved patient outcomes (8), better resource utilization (8), and improved access to care (8). Other identified impacts on patients were improved patient compliance (5), self-management ability (4), and satisfaction (3).

Impact on practice. Thirteen physicians identified an impact on their practices. The main impact, identified by almost all physicians (11), was improved productivity. Other impacts were improved quality of care (5), understanding of patient status (5), and provider satisfaction (1). There was a

negative correlation between productivity and understanding of patient status (-0.54).

Reason to refer to care manager. Fourteen physicians identified their reasons for referring patients to a care manager. The most common reason was patient compliance (10). Other reasons were patient complexity (6), disease complexity (6), resource management (5), physician workload (5), or undefined reasons (2). Resource management and physician workload were strongly correlated (0.86), and physician workload was negatively correlated with patient compliance (-0.52).

Problems. Only five physicians identified problems with the care manager service. The main complaint was that the care manager was not proximal (i.e., not located at the same site), or not always available (4). One physician said there were not enough care managers.

Recommendations for improvement. Eleven physicians gave recommendations for improving care management. These requests included more care managers (5), more appropriate use of care management (4), more variety in diseases treated by care managers (3), easier referral process (2), and making the service billable (1).

Cross-topic correlations. Correlations were also observed between answers across different topics. The strongest positive correlations were between workload or resource management as reasons for referral, and the problem of care managers not being proximal/available (0.86, 0.76). Other positive correlations were quality of care as an impact on practice and improved

patient outcomes (0.70), improved provider satisfaction and undefined referral reason (0.68), referral due to disease complexity and request for more care managers (0.62), and improved productivity and positive opinion of care management (0.61). The top negative correlations were positive opinion of care management and request for easier referral process (-0.64), and follow-up as a care manager role and both improved patient resource use and access to care (-0.51, -0.51).

Discussion

The purpose of this study was to identify physician perspectives of clinic-based care management, to determine reasons for physician support of the care management service, and reasons for referral of patients to a care manager. From both a qualitative and quantitative analysis of interviews with physicians who referred patients to care management, we found that there were two main motivations for referral to care management: to improve quality of care, and to increase efficiency of care. This result confirms other studies we have done on care management, where we have found that it improves both patient care¹⁹ and physician productivity.²³

Interestingly, this study shows an actual separation between the two motivations for referral. The qualitative analysis identified that referral patterns could be classified by the physicians seeing specialized skills in the care managers (surface vs. deep). That is, the physicians saw the care managers as either taking care of tasks the physicians might otherwise do (if time permitted),

or actually extending beyond what physicians can do. The quantitative analysis identified negative correlations between responses that supported this distinction. First, as a reason for referral, the negative correlation between physician workload and patient compliance indicates that physicians, at least in the interviews, saw care management as a method to increase efficiency or quality, but not both. Second, regarding impact on physician practice, physicians saw the impact as either on productivity or improved understanding of patient status, but not both. The positive correlations observed also seemed to support the concept that the motivations were not coincident. For example, there were high correlations among workload and resource management as reasons for referral were highly correlated (efficiency), and improved quality of care and improved patient outcomes (quality).

The qualitative analysis also identified a separate axis of referral patterns, influenced by how physicians connected the care management service with their practice (coordinators vs. collaborators). Physicians perceived care managers as either simply completing tasks, or as more involved in the ongoing management of patient care. The quantitative analysis supports this separation with a negative correlation between the view that the role of care managers included patient follow-up, and the impacts of improved patient resource use and access to care.

That the results of the quantitative analysis confirmed the results of the qualitative analysis is not necessarily surprising. After all, both analyses used the same transcribed interviews as primary data. The quantitative analysis could also be viewed as qualitative in nature, and similar to the qualitative analysis. Still,

there are important differences between the two methods. First, the two analyses were performed by separate teams of researchers. Second, the quantitative analysis was more defined and explicit in the data coding phase. The grounded theory analysis used constant comparison in the identification and coding of concepts and themes, while the quantitative results included only correlation coefficients that surpassed a specified threshold. The quantitative analysis should therefore be seen at least as confirming the qualitative results.

The quantitative analysis also identified other issues, specifically relating to access to care managers and the care manager referral process. Physicians referring for workload or resource management were more likely to cite the problem of care managers not being available or proximal. This may indicate either that physicians who use care management to improve productivity are more sensitive to care managers not being accessible, or that the accessibility of care management can actually inhibit physicians' ability to more deeply recognize the specialized skills of the care manager. Those physicians requesting an easier referral process were less likely to have a strongly positive opinion of care management, indicating the referral process can be a barrier in the use of care management. Finally, improved provider satisfaction was correlated with an undefined referral reason, which may imply that physicians' satisfaction with care management is influenced by their flexibility in referring patients. These results have important implications for the implementation of care management, and of decision-making models to guide the referral process. For example, two important differences between care management within disease

management vs. the chronic care model are the location of care managers, and the connection of care management with the physician. Our study identified that the proximity of the care managers, and the referral process itself can influence physician views of care management.

There are several limitations to this study. First, there was a potential recruitment bias in the study. We selected physicians for interviews who had experience with the care management service. We did not include physicians who never referred to care management; therefore, those who had a low opinion of care management and were thus unlikely to refer patients were underrepresented. This would result in an overstatement of physician opinion of care management; by including low referral physicians, we attempted to understand some of these issues. Second, there is a preference in Grounded Theory for semi-structured, open-ended questions, within an unscripted interview. This led to some questions not being answered by physicians. In our analysis of correlation among responses, we only included physicians who had answered the question to alleviate this bias. Third, this study was conducted within one health care organization, with a specific model of care management. Other models of care management that differ from this model should not be expected to have similar results; indeed, some of our results were specifically related to the locating of the care managers directly in the physician offices.

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Table 1: Questions and response categories identified from interview transcripts.

#	Question topic	Response categories
1	What is your understanding of the care manager's role?	Follow-up Management of difficult patients Coordinate care Education
2	What is your opinion of the care management service?	Strongly positive Positive Neutral
3	What has been the impact of care management on your patients?	Outcomes Satisfaction Understanding Self-management ability Resource utilization Access to care Compliance
4	What has been the impact of care management on your practice?	Productivity Quality of care delivered Provider satisfaction Understanding of patient needs
5	What are reasons you may refer a patient to the care manager?	Patient compliance Patient complexity Resource management Disease complexity Workload Undefined
6	What problems do you see with the care manager service?	Not proximal Not enough
7	What are your recommendations for improvement?	More care managers More variety in care management service More appropriate use of service Easier referral process Make service billable

Table 2: Concepts and supporting example statements identified from transcribed text of interviews with physicians.

Concept	Example statement
Physician referral to care management is based on physician's perceived ability to manage the patient.	"I think the major reasons [for referring to a care manager] were patients ... that needed help beyond what I could simply give them."
Primary reason for referral is time limitation; a strong secondary reason is the specialized knowledge and skills of the care manager.	"There's a lot of things that I don't know how to do that she can do and there's <i>[sic]</i> also things that I don't have time to do that she can help me with."
Physician referral is influenced by the patient's ability or willingness to self-manage.	"The ones who don't need to be referred are the ones that have adequate control of their disease ... obviously they're doing fine on their own, and they don't need more education or more encouragement."
Physician referral is influenced by the care manager's ability to help	"We talk about discovering somebody didn't have enough to eat ... really difficult social circumstances that the doctor had no clue on... The care manager [was] able to discover [those things]... I think a different perspective and they can be a little less threatening... a little less formal than the doctor and get information."

		Connect Practice to Care Manager Service	
		Low	High
Recognize Skills of Care Manager	Low	Surface Coordinators	Surface Collaborators
	High	Deep Coordinators	Deep Collaborators

Figure 1: Physician referral patterns. Physicians referred patients to care management based on how they recognized the skills of the care manager, and how they connected the care manager service to their practice.