Disease Management and the Organization of Physician Practice

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THERE IS A LARGE GAP BETWEEN WHAT PHYSICIANS DO for patients with chronic diseases and what should be done.[1] Most physicians lack the time, information technology, and financial incentives to develop organized processes to systematically improve the quality of care provided to these patients.[2] During the past decade, 2 main models have emerged to address this "quality chasm" in outpatient care: disease management and the chronic care model. Early in 2005, the Center for Medicare & Medicaid Services (CMS) will begin a large disease management initiative that may profoundly impact patient care and the organization of physician practice. But few physicians are aware of this initiative, and in general, neither disease management, nor the chronic care model are easily understood. Neither model appears in the index of a major collection of essays on medical group practice published in 2004.[3] This article will describe the CMS initiative, and describe and compare the disease management and chronic care model models and the effects they may have on physician practice and on patient care.

Disease Management

Disease management companies focus on identifying and frequently communicating with patients with serious chronic illnesses to enable them to better self-manage their illnesses.[4] Disease management companies use "all available data (self-reported, claims, administrative, clinical, encounter)" to create "data warehouses."[5] The objective is to identify and track specific populations of patients (eg, patients in a particular health plan within a given geographic area who have congestive heart failure or diabetes). Once patients are identified, disease management companies contact them directly (typically without seeking consent from a patient's physician) to offer them participation in the disease management program. The program is paid for by the patient's health plan.

Disease management companies monitor participating patients using information from their data warehouses and, in some cases, biometric devices placed in patients' homes (eg, a scale that weighs congestive heart failure patients, prompts them to report symptoms, and transmits both weight and symptom information to the companies' case managers).[6] When a potential problem such as rapid weight gain is identified, the case manager calls the patient to inquire about symptoms, diet, and medications and transmits the information to the patient's physician, usually via fax, and then follows up with the patient after an appropriate time interval. Disease management companies also notify physicians, and in some cases patients, of apparent deviations from evidence-based care (eg, asthma patients who are using large amounts of bronchodilators but no medications to control inflammation).

Disease management companies focus on educating patients and their families and on improving patient self-management skills via telephone calls, mailings, the Internet, and at times, home visits.[7] Some provide Web-based 2-way communication for patients to enter information (eg, home glucose testing values), view graphs tracking their progress, and learn more about how to care for their illness.

Health plans and many large employers are interested in the disease management model as a tool to control costs and improve quality, for example, by improving the health of congestive heart failure patients so that they require fewer hospitalizations. They hope that disease management will be more acceptable to patients, and perhaps to physicians, than was the 1990s managed care focus on utilization management.[8]

Disease management companies' revenues reportedly increased from $85 million in 1997 to $600 million in 2002.[9] These figures do not include the large, though decreasing, number of disease management programs developed and operated internally by health plans. During the past few years health plans have increasingly contracted for disease management services to take advantage of disease management companies' performance guarantees, focused expertise, and economies of scale. According to recent telephone interviews between the author and Gordon Norman, MD, MBA, vice president, Disease Management, PacifiCare Health Systems; Christobel Selecky, executive chairman, LifeMasters and president, Disease Management Association of America; and Arnold Milstein, MD, medical director, Pacific Busi-

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Processes Used by Reorganized Physician Practices That Implement the Chronic Care Model

Self-management Support

Includes education to help patients and their families acquire the skills, confidence, and tools (eg, peak flow meters for patients with asthma) to better care for their chronic illnesses

Delivery System Redesign

Includes creation of multidisciplinary teams to create both cooperation and a division of labor in which nonphysicians can help improve the care of patients with chronic diseases

Use of group visits in which patients with a chronic illness meet with each other and a team member to discuss ways to improve their self-management

Case management to help the sickest patients

Clinical Information Systems and Decision Support

Includes the use of registries that identify all of a practice's patients with a given chronic illness, reminders (ideally at the point of care) to teams of clinicians and support staff to help them follow practice guidelines, and feedback to teams on their performance

ness Group on Health (July 2004), many of the disease management services in the United States are provided by 10 companies, directly or through subcontractors.

A little-known section in the Medicare Prescription Drug, Improvement and Modernization Act of 2003 could lead to disease management programs becoming standard care for patients with serious chronic illnesses. Section 721, entitled "Voluntary Chronic Care Improvement Under Traditional Fee-For-Service," instructs the CMS to create large regional chronic care improvement programs for chronically ill beneficiaries in traditional Medicare fee-for-service.[10,11] The programs will be conducted as randomized controlled trials; if they show that disease management can save money and improve quality, the act encourages the CMS to expand the program nationally as early as 2007.

The CMS issued a request for proposals for chronic care improvement programs on April 23, 2004. In December 2004, the agency entered into 9 cooperative agreements with companies providing disease management services, with each one covering 1 geographic area and approximately 20 000 Medicare beneficiaries. Four of these agreements are with health plans (Aetna, Cigna, Humana, and United) and 5 are with disease management companies (American Healthways, Health Dialog Services, LifeMasters, McKesson, and XL Health). Many of the health plans and disease management companies included physician organizations (eg, national and state physician specialty societies) as associates in their proposals.

Medical groups and physician-hospital integrated delivery systems were eligible to submit proposals, but none received contracts. Several factors would have made it difficult for any but the very largest physician or physician-hospital organizations to submit competitive proposals: (1) a very large number of patients would be involved; (2) most of these would not be patients of the physicians involved; (3) success is likely to require very sophisticated information systems, as well as managers and organizational capabilities especially dedicated to conducting disease management programs. The degree of financial risk involved may also be too great for most provider organizations. Medicare will continue to pay providers of services directly for patients' care, but will additionally pay the companies selected for the chronic care improvement on a per-patient, per-month fee to conduct disease management. The companies will be required to repay this fee, in whole or in part, if they fail to improve quality and to save CMS money.

The Chronic Care Model

Like the disease management model, the chronic care model focuses on creating informed, active patients with improved self-management skills for their chronic illnesses. Unlike the disease management model, which focuses on communications between the disease management company and the patient in the patient's home, the chronic care model also aims to reorganize physician practice.[12] The chronic care model was developed during the 1990s by Wagner et al at the MacColl Institute at Group Health Cooperative of Puget Sound, a staff model health maintenance organization.[13] Its premise is that the processes used by physician practices were originally developed to care for acute problems and are poorly suited to help the growing numbers of patients with chronic illnesses. The chronic care model suggests that physicians reorganize their practices to include several processes (BOX).[14]

The chronic care model has received substantial interest from foundations, CMS through its quality improvement organizations, the National Committee for Quality Assurance, and the Joint Commission for the Accreditation of Healthcare Organizations.[15] Precise data are not available, but it appears that at least 500 physician groups, including half of the Federal Bureau of Primary Care's 700 community health centers, have implemented components of the chronic care model.[16]

Disease Management vs the Chronic Care Model

The disease management and the chronic care models share many objectives but differ in the processes they use to achieve their objectives and in their relative strengths and weaknesses.

Disease management companies try to improve quality by communicating directly with patients, rather than trying to persuade physicians to change. An important premise of disease management is that much can be done to im-

prove quality without waiting for physicians to undertake the difficult task of practice reorganization. The chronic care model attempts to enhance communication with patients while trying to change the organization of physician practice from a focus on providing as many office visits as possible to systematically trying to improve quality for the entire population of the practice's patients.

Disease management companies are strong where most medical groups are weak: they have sophisticated information technology systems, arrays of data collected from multiple sources, predictive modeling software to identify chronically ill patients, well-developed processes for conducting disease management, and specially trained managers and staff whose focus is the companies' core competence—disease management. The disease management industry appears to have economies of scale far beyond the size of all but the largest physician groups—once modeling software, a biometric device, or a Web-based system for communicating with patients has been developed, it costs little to add thousands more patients.

Physician groups lack these advantages, but do have direct personal knowledge of their patients—knowledge they could potentially use in conjunction with whatever information technology systems and data they possess to help construct registries.[17] Physicians can conduct in-person group visits,[18] and more generally, can use their relationship with patients to promote cooperation with self-management and case management processes.[19] Given their closer relationship with physicians, groups may be able to gain more physician cooperation with their chronic care model programs than disease management companies are likely to gain for promoting the disease management model. In addition, physician groups can reorganize (eg, by using multidisciplinary teams and decision support), while disease management companies cannot reorganize physician practices. Reorganized practices would have the potential to improve care broadly, rather than just for the diseases on which disease management companies focus. This is important, because if resources are focused on a few diseases, outcomes for other diseases could worsen.[20]

In contrast to the chronic care model, which uses multidisciplinary teams within physicians' practices to communicate with patients, disease management companies often communicate from thousands of miles away, though some create statewide call centers and contract with local agencies to provide visits to patients' homes. No study has directly compared disease management and the chronic care models to each other. Methodologically strong research evaluating the chronic care model as a whole is lacking, but many well-designed studies suggest that components of the chronic care model improve quality, particularly when used together.[21,22] Evaluations of disease management programs are also methodologically difficult,[23] but the preponderance of studies indicate that disease management improves quality for the diseases on which it focuses.[24,25] Though both the chronic care and disease management models aim to reduce health care costs, the evidence for cost reduction is inconclusive to date.[26]

CONCLUSION

In one possible future, which does not depend on physicians reorganizing their practices, disease management companies and physicians would complement each other's activities[27]: disease management companies would work with patients on diet, exercise, medication adherence, and early recognition of disease exacerbations, and would notify physicians in real time of changes in their patients' conditions. Physicians would focus on diagnosis and treatment, as they do now. Quality would likely improve, and physicians might appreciate the assistance provided by disease management companies.[28]

However, it seems likely that optimal quality would result from having both informed, activated patients and reorganization of physician practice. The chronic care model or some other, yet unspecified, model of practice reorganization might accomplish both of these goals, or they could be accomplished through a complementary relationship between disease management companies on the one hand and reorganized physician practices on the other, with each performing the functions it can do best.

Physicians may not appreciate the flow to disease management companies of prestige, influence over patient care, and income, all of which would likely come to some extent at physicians' expense. Physicians might prefer that their own groups perform disease management functions, but at present most groups lack both capabilities and financial incentives to do so. Given the significant investment of time and money necessary to develop these capabilities, it is unlikely that physicians will try to develop them unless payment systems change so that physicians who provide higher-quality care receive substantially more income.[29]

Unless physician groups are able to implement the chronic care model or some other model of practice reorganization and communication with patients, and unless this model can match or exceed the performance of disease management programs, continued growth of the disease management industry is likely—especially if it proves effective in the Medicare chronic care improvement randomized controlled trials.

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