Disease Management: Old Wine in New Bottles?

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EXECUTIVE SUMMARY

Disease management is a holistic, patient-focused approach to the treatment of disease across the spectrum of healthcare delivery. In its current form, disease management was created in response to the societal and economic burden that chronic illness contributes. There has recently been rapid growth in the development of disease management programs and sponsors are widespread within the industry, with the largest increase in independent vendors.

Although growth has been substantial, the hurdles these programs have encountered have kept them from reaching their full potential. The challenges that exist include clinical, financial, and regulatory issues, and these challenges have significant meaning to healthcare managers. In deciding whether to develop or enhance programs, executives must consider their capability of outcomes measurement, their provider relationships, and the arrangements for program implementation. Ultimately, if programs provide improved health and quality of life for participants, cost savings will follow.

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Healthcare experts disagree on the potential of disease management in its current form. Many believe disease management is a concept that has been long awaited and its implementation will essentially revolutionize the way health services are delivered. Others believe it is "old wine in new bottles"—that is, disease management is an old concept, and although it may be strong in theory, it has little substance with respect to implementation. Differing opinions aside, it is obvious that a new strategy is needed for managing care, and disease management may be the necessary change for an industry hit with consumer backlash and increasing premiums.

Disease management programs were initially developed by pharmacy benefits management (PBM) organizations. As their effects have become known to other sectors of the healthcare industry, there has been a rapid growth in programs from such sponsors as managed care organizations, providers, purchasers, and independent vendors. However, although the area of disease management has appeared promising, its sponsors have been faced with obstacles that have thus far prevented programs from reaching their full potential.

To explore the newest addition to healthcare delivery, this article attempts to answer the following questions: How is disease management defined? What are the reasons behind its inception? Who are the current sponsors of disease management programs? What are the challenges these program sponsors currently face for implementation? In addition, a discussion of the relevance for healthcare executives will identify considerations that all involved in the industry must face in determining whether these programs will be a successful component of their organizations.

WHAT IS DISEASE MANAGEMENT?

This question has been asked repeatedly in much of the current healthcare literature. Ellrodt et al. (1997) defines disease management as "an approach to patient care that emphasizes coordinated, comprehensive care along the continuum of disease and across healthcare delivery systems." Apart from this "care"ful definition, disease management is seen as a more holistic patient-focused mechanism and it assists in the redirection of services from the inpatient to the outpatient setting (Kongstvedt 1997).

Much of the literature currently views disease management as a shift in thinking from reactive to proactive. This shift in thinking includes several components as identified by Rossiter (1999) and shown in Table 1.

In determining what constitutes disease management, it is important to identify the illnesses that are of focus and what qualifies these as appropriate for such programs. Common illnesses that are currently emphasized in disease management include asthma, diabetes mellitus, congestive heart failure (CHF), coronary artery disease (CAD), lower back pain, acquired immune deficiency syndrome (AIDS), and certain forms of cancer. These chronic

Table 1
The Shift in Thinking to Disease Management

Medical Management—Traditional Model	Disease Management Model
Management on case-by-case basis	Population-based care management
Physician in charge of team Pharmacist providing advice as "chemist" Nurse as team "caregiver"	Interdisciplinary team of health providers
Care measured in components	Care measured as system
Individuals not treated until they initiate care	"At-risk" individuals identified and sought out for management
Affordable care	Appropriate care
Quality improvement based on process	Quality improvement based on outcomes

illnesses have been selected for DM programs on the basis of the following criteria (Kongstvedt 1997):

- Within the disease, there is a high percentage of complications that are preventable.
- The effect of the DM program is shown within one to three years.
- The conditions that exist can be managed in a nonsurgical, outpatient setting.
- There is a high variability among the current practice patterns.
- There is a high rate of noncompliance and this noncompliance is amenable.
- There are current practice guidelines on optimal treatments of the disease or there is the potential to develop such guidelines.
- A consensus can be obtained on the quality, outcomes measurement, and improvement methods of the disease.

THE BURDEN OF CHRONIC ILLNESS—WHY WE NEED DISEASE MANAGEMENT PROGRAMS

An underlying factor in the determination of what programs will be emphasized in disease management is the level of societal and economic burden that these chronic illnesses contribute. This burden can be illustrated by the incidence, prevalence, utilization, and costs for such diseases within the United States. Three of the

largest contributors to utilization and costs in the industry are presented here: congestive heart failure, diabetes mellitus, and asthma.

It is estimated that approximately 1.25 million Americans suffer from myocardial infarction (MI) each year, and of these the mortality rate is 40 percent. In 1995, this illness represented utilization of 573,000 coronary artery bypass grafts (CABG) and 434,000 angioplasties that were performed in the United States alone. The average cost per CABG was $44,820 and per angioplasty was $20,370. Overall, 7.9 percent of the $203 billion spent on Medicare has been contributed to ischemic heart disease (AHCPR 1999).

Studies in the United States during 1997 indicate that the number of persons with diagnosed diabetes was 10.3 million, with the number of new cases that year totaling 798,000 (National Diabetes Information Clearinghouse 1999). Hospital utilization for these individuals in 1997 was nearly 14 million days and the annual number of physician visits was approximately 30 million. In direct costs, this equates to $27.4 billion for hospital care and $3.2 billion in physician visits (Songer and Ettaro 1998).

Asthma affects an even larger portion of the population, at more than 14 million Americans currently. In addition, the mortality and morbidity associated with the disease is increasing, with a disproportionate amount in low-income and minority groups. The economic effect of the disease is evidenced by $7.8 billion in total costs for 1994, with half of the direct medical expenditures attributed to hospitalizations (Gillespie 1999).

THE EMERGENCE OF DISEASE MANAGEMENT PROGRAMS AND CURRENT PLAYERS IN THE MARKET

Pharmacy Benefits Management Firms

Pharmacy benefits management (PBM) organizations have been largely credited with the initiation of disease management. These companies were generally owned by pharmaceutical manufacturers with an early financial incentive for disease management. With the success of DM programs, manufacturers would ultimately sell more drugs to their clients. In a 1998 Novartis Pharmacy Benefit Report, 75 percent of PBM pharmacy directors identified expenditures for the development of disease management programs. In addition, HMOs reported that 16 percent of their own programs were provided through PBM companies and, in certain cases, employers have taken on contracts directly with PBMs for disease management (Gillespie, 1999). PBMs as disease management sponsors are still in existence; however, they are increasingly becoming a small piece of the pie in this business.

Managed Care Organizations

Following the PBMs, managed care organizations caught on to the notion of disease management rather quickly. This was partly due to the fact that disease management was in the subconscious of the managed care industry from its inception, but was put on the back burner during the era of strict, short-term cost containment.

At present, HMOs maintain a large portion of the disease management business yet have been, in many cases, caught in the make-or-buy struggle with the creation and expansion of disease management vendors. From a 1998 report of the Boston Consulting Group, 76 percent of HMO pharmacy directors indicate that they have some sort of disease management program in place (Gillespie 1999).

Medicaid

State Medicaid agencies have also been stakeholders in the DM market and, after an initial goal of decreasing costs, their programs are now becoming more comprehensive in nature. The method for program implementation under Medicaid varies by state. One method employed in the state of Virginia that has proven effective thus far is a cooperative effort with health providers within the state known as the Virginia Health Outcomes Partnership. Currently, approximately half of the states in the United States have Medicaid disease management programs in asthma, diabetes, CHF, or some combination thereof (Gillespie 1999).

Provider Organizations

Provider organizations are sponsors of disease management programs as well. As independent owners of this product line, however, they are not as prevalent as some of the others mentioned. One reason for this is the lack of outcomes measurement capability that is available among these entities compared to major health plans and the pharmaceutical industry. Instead of sole ownership, providers may simply coordinate care management with a health plan or may establish formal contracts with HMOs to provide nursing visits or triage services to program participants on an as-needed basis.

Independent Vendors

The fastest growing area within the disease management field is that of independent disease management vendors, often referred to as "boutique" companies. It seems that as disease management gradually becomes recognized as an area of profit making in the industry, entrepreneurs are swiftly identifying their niches in chronic illness. Several of these vendors have developed relatively solid reputations with their contracting plans or providers. However, the majority of the companies are still quite young to the healthcare industry and their current value is not yet well known.

THE EVOLUTION OF HEALTH MANAGEMENT CORPORATION: A CASE EXAMPLE

Health Management Corporation (HMC), a subsidiary of Trigon Healthcare, is a disease management company that has been in the market since the mid1980s. The company was established to provide preventive services and patient education and had little interaction initially with physicians. At that time, the organization's programs focused on prenatal care, health screenings, and nutritional instruction.

Beginning in the early 1990s, HMC began to emphasize more specific disease management programs. The organization improved its data systems

and collection process and began using risk stratification to identify patients with high utilization. During this phase of the company's growth, the focus was more on the management of service demand and disease interventions were just emerging (Ray and Sydnor 1999).

Recently, the DM vendor introduced its Healthy Return's program to treat four chronic conditions: diabetes, asthma, CHF, and CAD. Based on the severity of illness identified through risk stratification, the participants are placed in one of two categories: standard intensity or high intensity. For individuals identified as standard intensity, a welcome packet, mail-in assessment, and quarterly newsletter are provided. The participant also has 24-hour-a-day access to a registered nurse. Specifically, the mail-in assessment is not only used to educate individuals about key symptoms, it is a tool for determining if the participant might better be served in a high-intensity program. In addition to the standard-intensity services, the member identified as high intensity is served through telephone case management, access to community and government resources, work-site assistance, and pharmacy counseling (Gundlach and Warren 1999).

HMC employs over 70 registered nurses and health educators to serve its approximately 12 million eligible members. These members are located throughout the 50 states as well as in Puerto Rico and the United Kingdom. Of these participants, 400,000 are Trigon members and the remainder are a result of contracts that HMC has established with other managed care organizations (Ray and Sydnor 1999). In this respect, HMC has achieved an unusual success, as HMOs are often skeptical about outsourcing programs that have been established by other managed care companies.

Overall, HMC maintains a solid reputation thus far with 15 years of patient management experience. Although they are relatively young as a provider of disease-specific management services, they are a two-time winner of the C. Everett Koop National Health Award for demonstrated cost savings. At the present time, HMC is a role model for entrepreneurs interested in the world of disease management.

PROOF POSITIVE—OUTCOMES STUDIES ILLUSTRATE THE EFFECTIVENESS OF DISEASE MANAGEMENT

To gain a better understanding of why HMC is a two-time award winner for its programs, it is helpful to explore a recent outcomes study completed by the firm. The study examined participants in all of the firm's programs and results indicated a substantial decrease in utilization and a significant cost savings. Overall, HMC reported a $1.78 return per dollar spent on disease management programs during this two-year study.

For cardiovascular disease, the participants had a 21 percent decrease in the severity of their illness after one year in the program. Total healthcare expenses for cardiovascular disease decreased 41 percent in that year. Program participants with asthma presented with less severe symptoms

after DM intervention, and utilization for the emergency room (ER) decreased by 44 percent. ER costs for participants declined by 46 percent. Diabetic participants were able to better control their blood glucose levels and the classification for severe diabetics decreased by 7 percent. Hospitalization costs for diabetes also lowered by 16 percent as coordination of care improved with involvement of HMC health professionals (Ray and Sydnor 1999).

Other programs have received similar results. CIGNA Healthcare developed an internal program for asthma patients and completed a study of participants in Georgia and Florida in 1997. Results identified a 23 percent reduction in hospital admissions and improvements in medication use by 15 percent. United Healthcare of Northeast Ohio presented encouraging results as well for its CHF program. High-risk participants were monitored for approximately six months and hospital days for this group decreased from 283 to 146 days over that time period. United Healthcare expects another one to two years to pass before more reliable results can be obtained (Gillespie 1999).

SO WHY ISN'T EVERYBODY DOING IT? — CHALLENGES TO PROGRAM EXECUTION

Throughout the emergence of this healthcare industry sector, disease management has been faced with skepticism. This has been largely due to a lack of trust on the part of patients and providers for the motives of disease management sponsors. The involvement of the pharmaceutical industry provides a fundamental example of this. Because drug manufacturers have a primary incentive to increase revenues, programs sponsored by this industry might inappropriately emphasize the use of their products. In cases where this incentive prohibits health educators from instructing on necessary diet and exercise modifications or medications that are not produced by that particular manufacturer, the program may be ineffective. In addition, concern for the safety of participants may be warranted if health professionals recommend an inappropriate drug dosage to increase sales.

Clinical Considerations

Other potential problems exist for programs that are implemented nationwide by disease management organizations, regardless of sponsor. The medical community has expressed concern that instructional mailings or telephone calls from various parts of the country have been used as a means of targeting a larger population and are not enough to effectively manage their patients' diseases. This type of intervention also has the inherent capability of separating the care of the individual's chronic condition from care that the primary physician provides and could perhaps create a duplication of services from lack of coordination. Ultimately, this becomes quite confusing for the patient if he or she is being instructed by a health plan care manager for that plan's disease management program as well as a nurse from the physician's office or hospital's care management team. In

this sense, "commercial disease management programs may undermine primary care" (Bodenheimer 1999).

Because of the uncertainty providers may feel about these programs, physician "buy-in" may be one of the greatest challenges to DM sponsors. Generally, physicians will promote disease management if it is a program that creates less work for them and results in an overall improvement in the health of their patients. Specifically, however, these physicians may have differing viewpoints regarding the success of disease management. Nephrologists, for example, may be satisfied with disease management programs for diabetics if health educators instruct clients on self-management and the appropriate use of dialysis, thus improving the patients' quality of life. Cardiac surgeons, on the other hand, may feel that bypass surgery is more effective than long-term disease management for CAD and may find programs unnecessary. In these cases, financial incentives may be a key factor in aligning physicians with the disease management philosophy.

Financial Considerations

Financial incentives drive many in the healthcare industry, not just physicians. For managed care organizations, this incentive has created the need for disease management and the initiative is beginning to show positive results. However, HMOs are currently looking primarily at high-risk patients because they are recognized as the significant cost drivers in this area. Low-risk members, on the other hand, are not of priority in most programs, yet these individuals do have the potential to move into the high-risk group in the long run. There is lack of incentive for treatment of this group because by the time they move into a high-severity category, they will have likely moved onto a new type of health insurance. This holds true especially for the Medicaid population, who have the highest turnover rate of all the insured population.

Another financial consideration for health plan–sponsored disease management organizations is the make-or-buy decision. Health plans such as Aetna U.S. Healthcare, Trigon, and United Healthcare find it important to keep the majority of their programs in-house. This may be ideal if the plan's information systems are capable of the data collection and processing that is required to identify DM outcomes. Other health plans do not have the capacity for data warehousing or simply believe the DM vendors to be experts in the area of specific diseases and wish to have them run such programs. These organizations make the decision to outsource. For firms that choose to contract with DM vendors, there must be consideration of who should bear financial risk for the investment, as the challenge to performance is then ultimately in that entity's hands.

Regulatory Considerations

In addition to these challenges, it should be mentioned that like any new healthcare venture, the inception of disease management programs has lead to a quick response by legislative bodies. These movements have been at both the federal and state level. Federally,

a new payment system created by the Health Care Financing Administration penalizes managed care organizations for providing disease management services to their Medicare + Choice members. The plan, which began to be phased in on January 1, 2000, will ultimately provide a larger payment for persons with serious conditions and was created as encouragement for insurers to cover these individuals under their plans. Enrollees that are being well managed under DM programs, however, will not be considered as having a chronic illness under the new guidelines and therefore, will be Medicare "losers" for health plans (Gentry 1999; Hart 2000).

California has also taken a stab at regulating disease management. In September, the governor of California signed several bills into law, one of which prohibits disease management programs from treatment intervention without physician approval. Another measure requires that any health professional providing "medical advice services to a patient at a California address" be licensed in the State of California by the end of the year 2000. For many DM vendors, these bills are viewed as restrictive because they may limit the number of persons that are allowed to participate in such programs. It is also felt that the law could affect health plans' willingness to contract out for disease management services (Barnett et al. 1999).

Patient Considerations

Finally, a list of challenges to any healthcare program would not be complete without considering the barrier of patient compliance. There is no doubt that even with incentives properly aligned across every segment of the healthcare continuum, disease management will not be successful without the follow through of its participants. The challenge here is to motivate participants to comply with DM programs. Because of regulations requiring a system of community rating for health plans, direct financial incentives are not currently legal for plan-sponsored programs. For this reason, organizations must look for other methods of incentivizing their participants to adhere to treatment regimens and herein lies the ultimate challenge.

WHAT IS THE RELEVANCE TO HEALTHCARE EXECUTIVES?

It could easily be argued that all sectors within the healthcare industry have a stake in disease management. It is therefore important that managers make an effort to position their organizations correctly for the future of DM program execution. At this point one might ask, how can this best be accomplished?

Information Systems

First and foremost, the organization's information system and data warehouse should be created or enhanced with the capability of significant outcomes measurement. This is a consideration that the administration must make prior to planning a program as there are substantial upfront costs related to data collection and processing. The determination can also have a strong influence on the make-or-buy decision mentioned previously. For

security purposes, a payer or provider organization may wish to maintain its own database to keep record of its members internally regardless of the decision to outsource or provide services in-house.

Risk Sharing

A second consideration related to outsourcing services is the risk distribution arrangement between the contracted entities. In her guide to outsourcing, Susan Wels (1999) describes several DM vendors that participate in risk sharing with their clients as a guarantee of their performance. The medical director of HealthNet, a large managed care firm in Kansas City, observes that "risk sharing is a powerful tool to separate out disease management companies that really have confidence in their program." However, this arrangement means upfront costs to the contracting organization and many are unable or unwilling to pay this premium. If the organization prefers little to no upfront costs, the administration is better off searching for a DM vendor that already has a proven track record in the business, in which case risk sharing may not be a necessity.

Provider Coordination

A recommendation for any entity planning to delve into the disease management arena is careful coordination with providers. Contracting with area nurses and health educators who are already treating program participants at the hospital or physician's office may be a way of achieving this goal and may eliminate duplication of services and confusion for the patient. It may also be in an organization's best interest to require physician approval for participation in all programs. If this is required by the HMO, any organization that contracts with the plan must abide by the policy and is aware of the contingency from the start. This is important for three reasons.

1. As mentioned in the previous section, states are beginning legislation to require physician authorization and it is less costly to have the policy established than to modify it subsequently.
2. This communication is more likely to promote physician "buy-in" of the program as it keeps him or her involved, informed, and gives back a sense of control for intervention of the patient's condition.
3. Requiring medical authorization improves the quality and professionalism of the program, which is important for the reputation of the organization.

Incentive alignment for providers is also a necessary consideration for successful program execution. An example of a legislative decision that promotes this theory is a recent one by the Virginia General Assembly. Beginning July 1, 1999, the Code of Virginia was amended to require health plan coverage of diabetes self-management training. The training must be provided by a licensed healthcare professional and can be delivered in individual or group sessions (Virginia Acts of Assembly 1999). As providers are increasingly made aware of the meaning of the act,

more will wish to deliver the service and this will create an even greater need for care coordination. Apart from just complying with governmental mandates, administrators must determine how they can properly and consistently motivate providers to follow through with program recommendations. Communication with physicians and other clinicians is the first step in determining what incentives are appropriate and how these incentive systems can best be implemented.

Future Issues

Other program issues such as the targeting of low-risk individuals, DM initiatives for comorbidity, and programs on the Internet are concepts that managers will be forced to face in the not-so-distant future to remain competitive (Lewis 1999). These ideas bring up ethical concerns that will make planning a greater challenge for managers;, however, their inclusion will ultimately add value to disease management for its stakeholders.

CONCLUSION

In conclusion, the future of disease management appears strong as it is a necessary progression in the move toward true managed care. Program implementation is, however, not without its own set of hurdles. For managers with established disease management programs and for entrepreneurs attempting to find their niche in the field, a significant amount of planning must be completed before the venture can be successful. Throughout the planning process, executives must keep in mind the goal of exceptional patient care. Disease management programs should ultimately provide improved health and quality of life for participants, and with this, cost savings will follow.

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