Private sector initiatives in case management

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Case management for high-cost patients is offered by virtually all private insurers and many health management firms. Despite the proliferation of the service, little is known about the process of case management, how it varies among vendors, what its impact is on short- and long-run patient costs, and what its effects are on quality. In this article, the authors present the results of a survey of insurance-based programs that reveal some process variations that could lead to differences in program effectiveness and cost.

Introduction

Case management for high-cost patients is a cost-containment strategy that has recently gained tremendous popularity. The service is currently offered by virtually all private health insurance companies, most health care benefits management firms, and many small independent vendors. More recently, acute care and rehabilitation hospitals have begun to develop case management programs that will manage patients' care both inside and outside of the institution. Several State Medicaid programs have also begun to contract with private vendors or to offer case management services themselves for recipients with higher-than-average costs. Medicare has initiated a similar approach through its community care demonstrations focusing on long-term care (Kemper, Applebaum, and Harrigan, 1987).

Case management for high-cost patients seeks to control the health care expenditures (both acute and long-term) of the small proportion of the population that accounts for a large share of health expenditures. Utilization and cost analyses consistently find that as little as 10 percent of a given group can consume up to 70 percent of total health care expenditures (Zook and Moore, 1980; Congressional Budget Office, 1982; Berki, Wyszewianski, and Gimothy, 1983; Dobson, Scharff, and Corder, 1983; Health Data Institute, 1985; Riley et al., 1986; Ricklef, 1987).

Most high-cost patients can be classified into one of three categories. The first category consists of patients who have incurred major illnesses or injuries that require one extensive episode of hospitalization at the onset of the insult, intensive medical monitoring over an extended period of time, and perhaps long-term custodial care. This category includes premature or congenitally handicapped infants and victims of traumatic head or spinal cord injuries. The second category includes those individuals who suffer from chronic medical conditions such as cardiac illness, cancer, or AIDS (acquired immunodeficiency syndrome), who may require multiple hospitalizations and treatments throughout the course of the illness (Rosenbloom and Gertman, 1984). The third category includes individuals with mental illness or substance abuse problems, who require either continuous confinement or intermittent heavy utilization of health care services. Some employers have seen mental health and chemical dependency costs grow from 15–20 percent of health plan costs in the early 1980's to more than 40 percent in 1987 (Ricklef, 1987).

Virtually all case management programs for high-cost illness share the objective of coordinating and organizing health care resources to most efficiently address the medical and psychosocial needs of patients and families. Care for the very sick and severely ill is believed to be especially vulnerable to problems of duplication and fragmentation. For example, individuals may seek care from many sources or from inappropriate providers. Theoretically, at least, case managers can influence the kinds and amounts of services provided and the succession in which they are rendered to achieve the highest quality care at the lowest cost.

Many private companies have turned to case management because it has the potential to concentrate cost containment efforts on the few high-cost cases. Our research and contacts in the field lead us to the conclusion that there is a widespread perception that other cost-cutting programs designed for all employees have little effect on the high-cost group. Cost shifting, through high deductibles, coinsurance, or premiums, is unlikely to have a significant impact on medical care utilization by individuals traumatized by catastrophic illness or injury. Mechanisms aimed at providers, such as prospective pricing, discount arrangements, or alternative delivery systems, may also have limited impact because high-cost patients often are excluded or choose not to participate in these arrangements.

Despite the proliferation of case management for high-cost patients, questions about this service remain. How do current private sector programs work? In what ways do programs vary? What are the implications of these variations for program effectiveness? What are the frequency and magnitude of savings achieved by case management? Do savings achieved outweigh program costs?

In this article, we present findings based on two data sources to answer these questions. First, to address the process issues of case management, we conducted a telephone survey of 23 case management programs offered by large insurers and health management companies. Second, from one large insurer's program, we analyzed 244 case records representing 5 conditions—spinal cord injuries, head

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injuries, infant prematurity, cancer, and AIDS—to understand the cost effectiveness of case management.

Process of case management

Case management seeks to achieve cost-effective, quality care through four interrelated and interdependent activities:

- Seeking alternative settings and providers that are usually, but not always, lower in cost.
- Coordinating the sequence of care by facilitating communication among providers, patients, insurers, and other involved parties.
- Recommending or arranging for the coverage of alternative services not covered in the patient's plan.
- Instituting monitoring mechanisms.

The process itself generally consists of four phases: identification and referral of high-cost or potential high-cost cases; screening and assessment of referred cases for acceptance into case management; development and implementation of the case management plan; and case closure.

Identification and referral

Early identification of high-cost patients is considered to be the most significant factor in achieving cost savings. In a study performed by Intracorp on 300,000 disability management cases, timely referral was the best predictor of a successful outcome in terms of cost containment (Mazoway, 1987). Identification of cases at or near the onset of the accident or illness can lead to cost savings for three reasons. First, a large proportion of the costs incurred by these patients are generated in the early, acute phase of the illness. Case management personnel can intervene to ensure that this critical phase of care is provided in the most appropriate treatment setting by the most appropriate providers. Second, even though active management may not begin until later in the course of treatment, early intervention can facilitate the later stages of the process. The cooperation of the physicians and nurses involved in the care of the patient, considered by many to be the most critical element in the successful management of the patient, must be gained early in the patient's course of treatment. Third, families are often in greatest need of support and information in the acute phase of the illness. An effective case management program can gain family cooperation by providing emotional support and advocacy at this time.

In programs operating within fee-for-service plans, case management is typically triggered using diagnostic, cost, or other criteria. As shown in Table 1, all programs offered by the 10 largest commercial insurance carriers use a diagnostic list of the 10 or 15 conditions likely to be high-cost. However, a major difference among programs is found in their handling of mental health and chemical dependency cases. Although some insurance companies include these cases in their case management programs, many contract with specialty vendors for mental health and chemical dependency patients.

Many times, the case management program is integrated with other services provided by the vendor, such as hospital preadmission screening and continued inpatient stay review, which act as flags for identifying patients who may require case management. In other instances, cases are identified through the claims approval process. Typically this route is less effective, as long delays can occur between the onset of the accident or illness and the receipt of the claim. Finally, the case management service may have an on-site patient care coordinator who may refer cases.

Identification can also be initiated by the company for which the patient or patient's family member works. In this situation, the case management program is notified by the personnel or benefits department, the medical department, or the employee assistance program (EAP). And, in some instances, patients refer themselves or are referred by family, providers, or hospital discharge planners.

Screening, selection, and assessment

Once potential cases are identified, referrals are screened and briefly assessed for case management appropriateness. Administrative screening, usually performed by clerical staff, determines if the insurer is the primary or secondary payer; what the insurer's level of liability is; and if the company has purchased the case management service. Patients found eligible through this screening process move on to a brief assessment phase, generally handled by a case manager, to determine if the case will be managed.

Some case management programs decide whether or not to accept a case solely on the basis of its potential to demonstrate short-term (e.g., within 3 months) savings. To arrive at this decision, the case manager may or may not use formal protocols or explicit criteria. He or she may take into account the timeliness of the referral; the patient's current clinical status; and the adequacy of the patient's current treatment plan. If patient care is already being appropriately managed by the provider, community agency, or family, there may be little need for involvement of the case management program.

The decision whether or not to manage a case is a crucial one, influencing overall program cost effectiveness. Because charges for the case management service itself are considerable, program costs could easily outweigh savings, if all patients who are in a certain diagnostic group or who have incurred a certain level of claims are accepted for case management. The dilemma faced by programs is that the process used to determine whether to accept or reject cases is an imperfect one. Imperfect information about the case and a large number of uncontrollable factors—such as the clinical course of the patient's condition or the willingness of the family, medical providers, and the corporate client to

accept the decisions of the case management program—make it difficult to accurately target cases for management. There is a clear need for evaluation and research to uncover variables that could improve the likelihood that selected cases would benefit from case management.

Obviously, financial incentives play a part in the selection process. As shown in Table 1, some vendors charge separately for management services, usually on an hourly basis. Fees can range up to $130 per hour. Other vendors may include the cost in premiums or administrative overhead. Still others fold the case management costs into the price of the entire package of cost control and review services. Finally, some charge a flat fee (based on a percentage of total paid claims, for example). Clearly, those who charge by the hour face a strong incentive to relax assessment criteria and manage most referred patients. Programs that do not charge separately or that charge a flat fee may be forced to use more stringent acceptance criteria and may actually miss some cases that could benefit from management.

Finally, the attitude of the corporate client paying for management is very influential in deciding who is managed. If the client is purchasing the service for cost-containment purposes only, the case management program is under greater pressure to justify management on the basis of short-term cost savings. On the other hand, if the client views case management as a benefit or "quality enhancement,"

Table 1

Selected characteristics of case management programs for the 10 largest[1] commercial insurance companies: United States, 1986

Name of company	Trigger event	Case manager training	Site visits	How reimbursed
Prudential	Diagnosis list and/or maximum length of stay	Registered nurses	Performed when necessary	Fee-for-service
CIGNA[2]	Diagnosis list and/or annual claims of $20,000 or more	Registered nurses with specialized training	Routinely performed	Fee-for-service for large employers; cost factored into premium for small employers
Mutual of Omaha	Preadmission review screen; claim volume; provider or other referral	Registered nurses	Performed when necessary	Depending on policy contract, cost factored into premiums or fee-for-service
Aetna	Diagnosis list	Registered nurses	Arranged through local vendor	Per case charge based on projected savings
Travelers	Diagnosis list, and/or $25,000 paid on a single claim	Registered nurses; nurses with specialized backgrounds and training in each diagnostic category	Performed when necessary and early in the process	Cost incorporated into cost of review program, or purchased separately on a fee-for-service basis
Metropolitan[3]	Diagnosis list and/or claims for a confinement equal to or greater than $20,000	Registered nurses with specialized backgrounds; physicians and social workers used as consultants	Performed when necessary	Fee-for-service
CNA/Continental Assurance Company	Precertification of hospitalization continued stay review; diagnosis list and/or claims of $50,000 or more; more than two hospital admissions within 6 months	Registered nurses and rehabilitation specialists	Arranged through local case management vendor	Cost factored into cost containment program
Lincoln National	Diagnosis list and/or annual claims of $15,000 or more	Registered nurses	Arranged through local vendor	Cost factored into premiums
New York Life	Diagnosis list and/or cases with at least 21 days hospitalization	Registered nurses with home care and acute hospital experience	Routinely performed	Cost factored into premium for policy-holders; fee-for-service for administration clients
Principal Financial Group (formerly known as Bankers Life of Iowa)	Diagnosis list and/or claims exceeding $5,000 within the first 30 days of hospital confinement	Registered nurses with specialization	Performed when appropriate	Cost factored into premium or service fee

[1]Size based on dollar value of total premiums earned less dividends.
[2]Service provided by Intracorp Inc., a subsidiary of CIGNA.
[3]Service provided by Corporate Health Strategies, a subsidiary of Metropolitan.

SOURCE: (Henderson, Bergman, Collard et al., 1988).

the company may be willing to pay for the service, even in cases in which there is little likelihood of savings.

Once the patient is accepted into management, a lengthier, more formal assessment takes place. Information is gathered from the patient's physician(s), other medical providers, and family members. As shown in Table 1, programs vary in how this information is gathered. Although some use on-site assessment, performed by either the case manager or a nurse contracting with the program, others rely on information gathered over the telephone or contained in medical records. Many programs have come to the conclusion that an on-site assessment is not warranted in every case, because in uncomplicated cases it can add unnecessarily to program costs, while not greatly improving the quality of information. In cases where the clinical nature of the patient's condition or the family or living situation is complicated or unclear, a site visit may be the only way to obtain needed information about the case.

Plan development and implementation

The assessment process culminates in the development of a case management plan. This plan specifies the type and sequence of medical and supportive resources required to optimize the patient's treatment at the lowest possible cost. The plan sometimes also includes goals and objectives for treatment and the expected amount of time needed to reach these goals. Case manager training, experience, and access to information about treatment alternatives undoubtedly influence the quality of the case management plan. Most programs use registered nurses as case managers (Table 1), but programs differ as to whether or not cases are assigned according to nurses' specialty training.

The case management plan also addresses the problem of how to obtain funding for needed services that are not covered in the patient's plan. Examples of alternative services include hospice care, home attendant care, equipment (e.g., apnea monitors), supplies (e.g., specialized nutritional formula), transportation, and home modifications. Case management programs differ in their willingness to seek actual modifications in the patient's benefit plan. Some programs, particularly those offered by health management firms, make suggestions about alternative services and possible funding sources (e.g., charitable agencies or public programs). Insurance-company-based programs that are providing the service to accounts they underwrite are more likely to be able to perform plan modifications. Because the ability to pay for alternative services may be the characteristic that most distinguishes case management from simple discharge planning or utilization review, this distinction among vendor types may be important.

An innovative feature of some case management plans is the determination of which goals were reached at the expected times, which were not, and the reasons why not, where appropriate. For example, a planned discharge date may have been missed because of a change in the patient's clinical status (medical reason); because of the unavailability of the appropriate home care (service-related reason); or because of a change in the ability of the patient's caregiver to have the patient at home (support-related reason). Documentation of these causes facilitates analysis of the obstacles to successful implementation of case management. Accountability to the purchaser is also increased.

Case management closure

Cases are closed for a variety of reasons: the patient's medical condition has stabilized and case management goals have been achieved; the patient or family chooses to cease participation; the purchaser decides that case management has been involved long enough; or, in some instances, the patient dies.

Savings potential

Little objective information is available on the cost effectiveness of case management. So far, most of the "evidence" on cost savings comes from vendors who tend to report experiences with a few specific patients. It is not clear whether or not these anecdotal findings can be extrapolated to represent all managed patients.

Employers are usually ambivalent about the ability of their case management program to save money. They are frequently skeptical about the cost/savings ratios quoted by vendors. When questioned, one corporate benefits administrator stated that "[the evidence for savings] depends on the case. [It is] very difficult to know what would have happened without [case management]. In some cases there are clear gains while others appear to cost more than save. We're doing it to help the employee and have faith that over time we will have a net saving." (Walsh, 1987).

Case management proponents claim the service can achieve cost reductions in both the short and long run. In the short term, they point to specific activities coordinated or facilitated by case management. These include reducing the length of stay in the inpatient setting; transferring the patient to a similar, but lower cost, inpatient alternative; and reducing the cost of the home care program. Long-run savings can be achieved by preventing readmissions through the provision of preventive services and decreasing future health care needs through maximizing the patient's recovery level.

Although case management clearly has the potential to decrease costs through these means, questions remain about how often these benefits actually occur in the cases managed by any one program. Moreover, even if case management takes place, it is difficult to know whether or not in its absence the activity may have been coordinated by the primary physician, hospital discharge planning service, a public social service agency, or the patient's family. Because case

management is a relatively expensive service to provide, the benefits from the program should at least equal the costs.

The cost-effectiveness issue needs to be addressed through studies that compare cost savings to program costs. Studies are also needed to determine which patient, program, and environmental variables are linked to successful management. Cost-effectiveness studies can only be rigorously performed through a comparison of the costs of managed patients to the costs of similar unmanaged patients over a fairly long timeframe, for example 1 to 5 years. To be truly comprehensive, costs measured should include not only health care claims but disability and workers' compensation claims and costs due to productivity losses. Unfortunately, at the present time longitudinal data of this type do not exist.

To shed light on the cost-effectiveness issue, we studied the program records from a group of 244 patients. Of this total, 82 were infants or young children, 50 were patients with traumatic head injury, 44 were patients with spinal cord injury, and 68 had primary diagnoses of terminal cancer or AIDS. Demographic and diagnostic data for the four types of cases are presented in Table 2. These patients represented virtually all cases in these diagnostic categories managed by one insurance-company-based case management program from 1984 through 1986. These diagnostic categories accounted for approximately 50 percent of the program's active caseload in that time period.

Each of the 244 cases was reviewed for evidence of short-term health care claims cost savings. Such savings were judged to have occurred when the case record clearly stated that the management program was instrumental in effecting the following: earlier-than-anticipated discharge from the acute care hospital; earlier-than-anticipated discharge from another inpatient facility; transfer to a less expensive facility; or reduction of the level of intensity of home care.

Cases were also reviewed for the likelihood that long-term savings would result from the care plan instituted by the management program. Potential long-term savings were divided into four categories: prevention of future medical complications for the patient; prevention of future psychological complications for the patient; prevention of future medical complications for a family member; and prevention of future psychological complications for a family member.

Dollar values were attached to the estimated short-term savings categories. These values were obtained by multiplying the expected days of prevented hospitalization, visits, or tests, by the average price for the service in the region in which the patient was receiving care. No dollar values were attached to the savings in the long-term categories because precise judgments about prevented utilization could not be made. Case management costs were derived by multiplying the number of hours billed to the corporate client by $100, the average charge of the case management services over the time of the study.

Two researchers independently reviewed each case for the presence of short-term and potential long-term savings. More than 90 percent of the time, the researchers agreed in their assessment. When there was disagreement, a third researcher broke the tie. The cases judged by this process to have short-term savings underwent another review by physician

Table 2

Number and percent of managed care patients in four selected categories, by diagnosis: 1984-86

Patient characteristic	Diagnostic category							
	Spinal cord injury[1]		Head injury[2]		Infant prematurity[3]		Cancer/AIDS[4]	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	44	100	50	100	82	100	68	100
Sex								
Male	26	58	33	66	42	51	39	57
Female	18	42	17	34	40	49	28	43
Race								
White	28	64	43	86	51	62	54	79
Black	5	11	3	6	5	6	1	2
Other/unknown	11	25	4	8	26	32	13	19
				Mean age in years				
	29		29		.83		46	

[1]The distribution by principal diagnosis was: paraplegia/quadriplegia, 47 percent; spinal injuries, 42 percent; other, 9 percent; and dissecting aneurysm, 2 percent.

[2]The distribution by principal diagnosis was: cerebral hemorrhage, 47 percent; brain injuries, 27 percent; brain lesions, 10 percent; anoxic brain damage, 8 percent; and other, 8 percent.

[3]The distribution by principal diagnosis was: Prematurity and slow growth, 52 percent; other congenital anomalies, 23 percent; respiratory conditions, 13 percent, other newborn conditions, 7 percent; and cardiac/circulatory anomalies, 5 percent.

[4]The distribution by principal diagnosis was: malignancy of brain and spinal cord, 29 percent; other, 21 percent; immune system deficiency, 15 percent; malignancy of blood and blood-forming organs, 7 percent; malignancy of breast/female reproductive tract, 6 percent; malignancy of bone and cartilage, 6 percent; malignancy of gastrointestinal system, 6 percent; malignancy of respiratory system, 4 percent; and malignancy of genitourinary system, 3 percent.

NOTE: AIDS is acquired immunodeficiency syndrome.

specialists familiar with the treatment involved. The final judgment as to the magnitude of the cost savings achieved by the program in each of these cases was made by the physicians.

Cost effectiveness results

Based on this review process, one-third of the cases (81 of 244) were judged to have short-term savings. This proportion varied by diagnostic category: case management achieved the highest proportion of short-term savings with cases in the cancer/AIDS category (42.6 percent) and the lowest in the spinal cord injury group (24.4 percent). Potential long-term savings were found in almost 60 percent of cases. More than two-thirds of the cases in the spinal cord injury, head injury and high-risk infant categories had potential long-term savings, but these were found in only one-third of the cancer/AIDS cases. This latter finding is because of the poor patient prognosis and short life expectancy in many of these cases.

Data on savings achieved and costs incurred by this case management program for the sample of 244 patients are shown in Table 3. For these patients, estimated short-term costs would have been approximately $1.85 million higher without case management. To achieve these savings, corporate clients were billed almost $1.52 million for the service. The return on investment, therefore, was slightly over 1. Because this return is based on short-term expected savings only, however, it can be considered a low estimate.

Case management would produce a much higher return if the service could be targeted to cases in which short-term savings are realized. As shown in Table 3, if the case management costs for only these cases are considered, the return on investment is almost 4 for all cases and nearly 6 for head injury cases.

Conclusion

Case management programs are currently offered by a broad array of insurers and health management firms and are rapidly being developed by providers, employers, and others with responsibility for the delivery or financing of care to costly patients. Although many of these programs share common goals and processes, information is lacking as to how the specific components of case management affect patient costs and quality of care.

Our survey of insurance-based programs uncovered some variations in the process of management that could lead to differences in effectiveness. Moreover, better criteria need to be developed in the areas of patient identification and assessment. Ideally, risk markers would be used to identify patients before significant costs have been incurred. Current programs place all or most of the emphasis on cases in which the insult or injury has already occurred and therefore the ability to minimize costs has already been compromised. The criteria used to assess patients' appropriateness for management should be made more explicit and assessment should be performed more systematically. Managers should be able to judge if their involvement is justified after a fairly quick, inexpensive review of relevant clinical, psychosocial, and administrative information about the case.

There is a clear need to collect longitudinal data on medical claims, disability costs, workers' compensation, and long-term care costs for case-managed patients. Only by comparing these costs to similar costs for nonmanaged patients can the true impact of the service be measured. Our preliminary examination of short-term cost effectiveness, using a criteria-oriented approach based on clinical judgment, showed little evidence for short-run cost savings when program costs were considered. However, the results

Table 3

Savings achieved and costs incurred through case management, by diagnostic category: 1984-86

Item	Diagnostic category				
	Spinal cord injury	Head injury	Infant prematurity	Cancer/AIDS	All cases
Total number of cases	44	50	82	68	244
Number (percent) of cases with short-term savings	11 (24.4)	15 (30.0)	26 (31.3)	29 (42.6)	81 (33.1)
Dollars saved on estimated claims[1]	$442,767	$609,952	$494,711	$305,820	$1,853,250
Case management costs for all cases[2]	352,606	395,704	463,011	304,420	1,515,741
Case management costs for cases with short-term savings only[2]	106,898	104,625	156,390	108,953	476,866
Return on investment for all cases[3]	1.26	1.54	1.07	1.00	1.22
Return on investment for cases with short-term savings only[4]	4.14	5.83	3.16	2.81	3.89

[1]Cases with short-term savings had dollar values attached to estimated savings achieved through prevented utilization; all other cases were assumed to have zero dollars in savings.
[2]Total hours of case management multiplied by $100.
[3]Dollars saved on estimated claims divided by case management costs for all cases.
[4]Dollars saved on estimated claims divided by case management costs for cases with short-term savings only.

NOTE: AIDS is acquired immunodeficiency syndrome.

of our analysis implied that case management will save money if the service is targeted to certain patients and if program costs are lowered. Further research is needed to determine the specific characteristics of patients suitable for management and the specific interventions that can lead to both short- and long-term cost savings.

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