CBO TESTIMONY

Statement of
Dan L. Crippen
Director

Disease Management in Medicare: Data Analysis and Benefit Design Issues

before the
Special Committee on Aging
United States Senate

September 19, 2002

This statement is embargoed until 9:30 a.m. (EDT) on Thursday, September 19, 2002. The contents may not be published, transmitted, or otherwise communicated by any print, broadcast, or electronic media before that time.

CONGRESSIONAL BUDGET OFFICE
SECOND AND D STREETS, S.W.
WASHINGTON, D.C. 20515

Mr. Chairman, Senator Craig, and Members of the Committee, I am pleased to be here with you today. This morning, I will be talking about the patterns of spending for and clinical characteristics of Medicare beneficiaries who are highly and persistently expensive—and who thus might be candidates for disease management. I will describe, in general terms, the disease management programs that have been applied in the private sector in an attempt to improve the quality of care and to control its costs, and will comment on the potential for applying similar strategies in the Medicare program. I will also try to review some of the questions that must be addressed in designing a disease management benefit for Medicare. Let me say at the outset that the Congressional Budget Office (CBO) is now conducting a series of studies to examine those important issues. I will present some preliminary results from that work today, but as we proceed with our research, we will continue to refine our analysis.

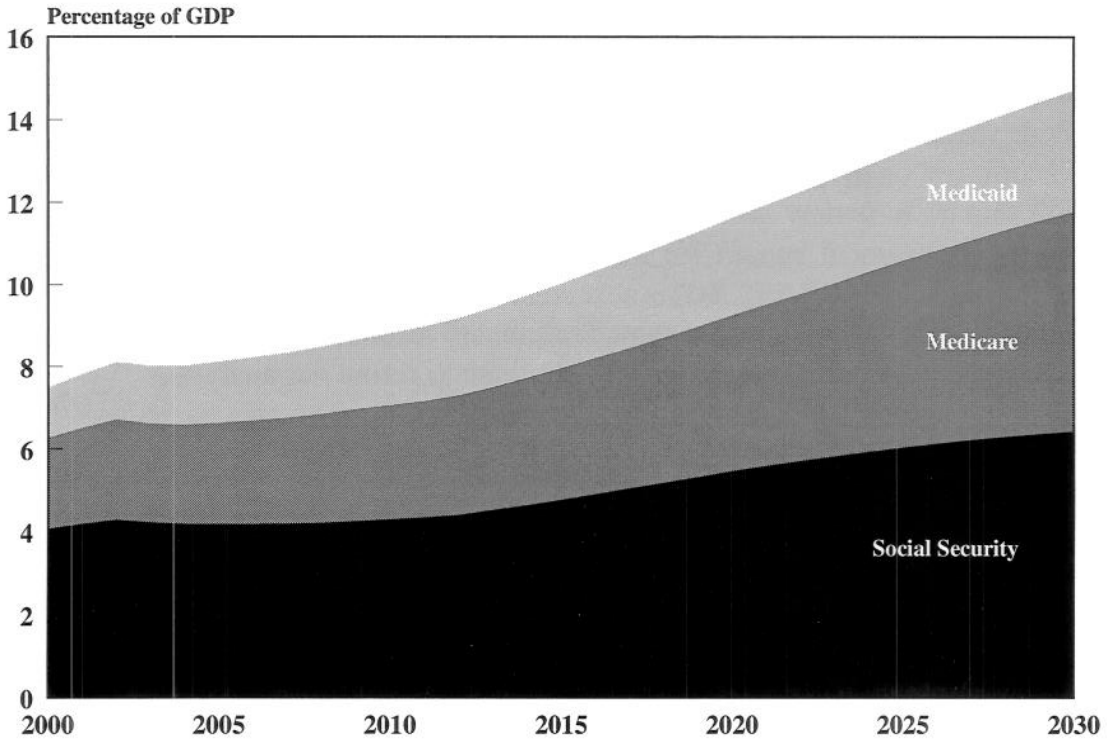
MEDICARE'S SPENDING OUTLOOK

To provide a context for this discussion, I would first like to underscore the long-range fiscal challenges facing the Medicare program. Between 2003 and 2012, Medicare spending is projected to grow much faster than the economy as a whole. Outside of that budget window, the fiscal pressures will only accelerate as a result of the aging of the baby-boom generation. Even if the nation spent the same fraction of gross domestic product (GDP) on each Medicare beneficiary in 2030 as it does today, spending for Medicare would double from its current 2.3 percent share of GDP to 4.5 percent by 2030. In addition, the fiscal implications of the baby boomers' aging are compounded by the fact that health care costs measured per beneficiary routinely grow significantly faster than does the economy measured on a per capita basis. Consequently, if current law remains unchanged, CBO expects that spending for Medicare will more than double, to 5.4 percent of GDP, by 2030.

Also projected to rise is spending for the "big three" entitlement programs—Social Security, Medicare, and Medicaid—taken as a whole. Between 2000 and 2030, such spending as a share of GDP will virtually double. Expenditures for those programs will grow from 7.8 percent of GDP to 14.7 percent by 2030 (see Figure 1). As this Committee knows, paying for those increased costs will require dramatic reductions in other spending, sizable increases in taxes, or large-scale borrowing.

Addressing these fiscal pressures is one reason policymakers have expressed interest in adding a disease management benefit to Medicare. Proponents claim that such a benefit would improve the quality of care that beneficiaries receive and at the same time reduce federal costs. Clearly, the opportunity to enhance beneficiaries' health while saving money is a tantalizing prospect for the Medicare program, but substantial

FIGURE 1. FEDERAL SPENDING ON SOCIAL SECURITY, MEDICARE, AND MEDICAID, 2000-2030



SOURCE: Congressional Budget Office.

uncertainties exist on both counts. In particular, estimating the net budgetary impact of adding a disease management program to Medicare would require determining both what those disease management services themselves would cost and whether they would reduce the costs of providing other covered health services. Unfortunately, the available information is limited in both of those areas, and as a result, my testimony may raise more questions than it answers. Nevertheless, I hope to help the Committee in its deliberations by addressing four key points:

- First, I will try to define what is meant by "disease management" and discuss how it is provided in the private sector.

- Second, I will describe CBO's ongoing analysis of the spending patterns and clinical characteristics of Medicare beneficiaries over a period of several years—focusing on whether beneficiaries who account for a large share of Medicare's program costs over time can be identified early enough to permit

cost-saving interventions. (I will also talk briefly about how CBO's longitudinal database was constructed and describe some steps that could be taken to improve the utility of those data in the future.)

- Third, I will discuss the existing evidence about whether disease management programs have actually reduced health costs in the private sector and will note questions about the applicability of those results to Medicare.

- Finally, I will talk about the issues to be considered in designing a disease management program for fee-for-service Medicare beneficiaries and how Medicare's existing payment systems might affect the potential savings from such a program.

WHAT IS DISEASE MANAGEMENT?

The term "disease management" covers a wide range of activities that affect individuals' health status and use of health care services. There are at least two limitations in current medical practice that a disease management program might address:

- First, patients with multiple medical conditions may receive care from many different physicians or providers at the same time, take a number of different drugs to treat their various conditions, and often be called on to manage their own care at home. Frequently, the responsibility for coordinating care among physicians and other providers falls on the patient, who may have a limited ability to carry out that function.

- Second, medical research has contributed to a growing body of evidence on the most effective protocols for treating particular diseases. However, reports by the Institute of Medicine and others have observed that a large gap often exists between such evidence-based treatment guidelines and current patterns of practice. Indeed, the number of medical studies has grown tremendously in recent years, making it ever harder for physicians to keep up with the latest developments.

In light of those limitations, a separate entity that coordinated care across providers, ensured that patients complied with their treatment regimens, and encouraged adherence to evidence-based treatment guidelines could improve the quality of care that individuals received.

The steps taken by a disease management program to improve the quality of care could also reduce health care costs for its enrollees. As an illustration, consider the case of a patient with diabetes, a disease characterized by a lack of control of blood sugar resulting from an inadequate supply of insulin. Patients with the disease may take synthetic insulin or use other medications to help control their blood sugar levels. That practice gives patients a large role in providing their own care, but many patients may have difficulty in doing so. Moreover, diabetes has a number of long-term complications including damage to the nerves or blood vessels in a person's lower legs and feet, which can necessitate amputation, and damage to the eyes, which can result in blindness.

A disease management program could try to ensure that enrollees received recommended foot and eye exams annually, either by contacting their physicians directly or by encouraging patients to request those tests. In addition, since diabetes is associated with an increased risk of heart disease, better monitoring of a diabetic's cholesterol levels—which could be part of a disease management program—could aid in preventing heart attacks or strokes. By helping diabetics manage their own care and by detecting problems earlier, those interventions could prevent much more costly treatments, such as hospitalization or surgery. If the total savings from avoided hospitalizations exceeded the costs of additional screening tests plus the administrative costs of the disease management services themselves, then total health care costs would be reduced. It is this potential for savings that has probably led many employers to embrace disease management in recent years and thus contributed to the rapid growth of the disease management industry.

Yet disease management is not the only intervention that has been developed to address these problems. "Case management" represents an alternative approach to coordinating care that may also warrant consideration by the Congress because it could address the complex needs of the Medicare population. The differences between the two approaches are described in Table 1 and can be summarized as follows:

- *Disease management* programs have been focused on treating patients with specific diseases—particularly patients with prevalent and relatively well-defined chronic illnesses like coronary artery disease, congestive heart failure, diabetes, chronic obstructive pulmonary disease, asthma, and end-stage renal disease. Those programs often rely on the similar needs of their enrollees, which allows standardized approaches to be used.

TABLE 1. BROAD DIFFERENCES BETWEEN CASE MANAGEMENT AND DISEASE MANAGEMENT

	Case Management	Disease Management
Characteristics of Patient Population	People at high risk for costly, adverse medical events and poor health outcomes	People diagnosed with a specific disease
Methods for Identifying Patient	Mailed questionnaires; data on use of hospitals and emergency rooms; referrals by physicians using criteria to identify "high-risk" patients	Data on presence of a particular diagnosis; prescription for certain drugs used to treat a disease; referrals by physicians who treat many patients with that disease
Patient Education	No standardization of curriculum or educational materials; highly individualized	Standardized curriculum and educational materials for a specific disease
Reliance on Evidence-Based Treatment Guidelines	Low	High
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The distinctions between those two approaches appear to be blurring, however, as disease management firms have begun to focus on patients with multiple diseases—partly in response to the demands of employers who desire a single point of contact for enrollees with multiple conditions. Indeed, the definition of its services developed by the Disease Management Association of America appears to encompass both types of care coordination. Thus, the remainder of my testimony will refer to disease management, but the Congress may want to include case management approaches in its deliberations.

PROFILES OF MEDICARE BENEFICIARIES

The discussion above focuses on the means by which savings could be achieved through disease management, but the extent of those savings would depend in no small part on whether disease management programs could address the needs of beneficiaries who accounted for a large share of Medicare spending. In turn, answering that question would require knowing which beneficiaries accounted for a large share of spending, whether their spending was sufficiently persistent or predictable to allow successful management, and whether the diseases they had were amenable to management. I will attempt to shed light on those issues by using some preliminary results from CBO's own internal study, which primarily analyzes data on Medicare claims covering the years 1989 through 1997.

CBO's Longitudinal Database of Medicare Claims

The source for CBO's analysis is a longitudinal database that contains information on Medicare spending for covered services used by a random sample of fee-for-service (FFS) beneficiaries between 1989 and 1997. CBO's longitudinal database was derived from Medicare claims records maintained by the Centers for Medicare and Medicaid Services (CMS). The sample comprises 5 percent of beneficiaries—nearly 3 million people—who were enrolled in Medicare on January 1, 1989, or who became eligible for Medicare through December 31, 1997. CBO studied only beneficiaries in the FFS Medicare program because information on expenditures is not available for beneficiaries during the periods in which they are enrolled in managed care plans. The number of people in the sample who were enrolled in the FFS program in any given year fluctuated between 1.7 million and 1.8 million (representing 34 million to 37 million beneficiaries overall). Attrition from the sample occurred when beneficiaries enrolled in managed care, disenrolled from Part A or Part B of Medicare, or died. Total enrollment figures from CBO's longitudinal database closely track published CMS data.

The beneficiary-level files contain one record for each person in the sample who was enrolled in the Medicare FFS program at any time between 1989 and 1997. For each beneficiary, the record contains the person's date of birth, race, sex, state, county, and zip code of residence; it also contains the date of death, if applicable. For each month between January 1, 1989, and December 31, 1997, that the patient was alive and enrolled in the FFS program, the record includes total monthly expenditures for Medicare-covered services, by service type.[1] Those expenditures include payments made by Medicare on behalf of beneficiaries as well as beneficiaries' copayments (which are often covered by third-party payers). Again, spending totals from CBO's longitudinal database and published CMS data track closely.

CBO's database also includes both information on the diagnoses for which beneficiaries received medical care and data on the medical procedures (such as surgery) that were performed. Those data were derived from Medicare claims files for inpatient hospitals, skilled nursing facilities, physician visits, and outpatient hospitals.

CBO's effort represents a significant enhancement over currently available data. It builds on work initially funded by the National Institute on Aging and conducted by a team of economists and physicians at Stanford University. Thus, our longitudinal database is a rich source of information on patterns of Medicare spending over time and the clinical characteristics of Medicare beneficiaries who use medical care. Although CMS routinely releases data files to researchers, the files generally cover only a single year and consist of separate files for enrollment and for the use of each type of covered service. Combining those files to generate a single person-level record of all spending for each beneficiary is an extensive undertaking. Under a data-use agreement with CMS, CBO obtained information on a continuous sample of beneficiaries enrolled in the Medicare FFS program over the entire 1989-1997 period, allowing analysts to follow the experience of beneficiaries from year to year.

Yet despite its advantages, the database has some limitations. First, a significant lag exists between when medical services are rendered and when data about spending on those services become available to researchers. Providers submit bills to Medicare's fiscal intermediaries and carriers, who compile the data and send them to CMS. CMS then constructs and validates separate files for each provider for each year. Currently,

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CMS is releasing initial data for 2001—nine months after services were rendered in December 2001. The gap is even longer for services rendered in previous months. Because it takes time to construct a longitudinal file combining all of the provider-level files and beneficiary demographics, CBO will be unable to analyze data for 2001 for at least another year. Because complete data for 1998 and 1999 were not available, the most recent year of data for the analysis I am discussing today is 1997.

Additionally, the data that are available from CMS do not include a number of important elements, including information on the use of medical services by Medicare beneficiaries who are enrolled in managed care plans and information on the use of outpatient prescription drugs. (Even though Medicare does not cover prescription drugs, many of its beneficiaries have drug coverage from other sources.) The data also do not include information on spending by Medicaid, which is a source of drug coverage and represents a significant amount of spending on beneficiaries who are eligible for both programs (particularly those who live in nursing homes). Data from other payers on the use of services that are not paid for by Medicare would significantly enhance the utility of CBO's database but might be difficult to obtain. Finally, the data include neither information on beneficiaries' socioeconomic status nor self-assessments of their health status, both of which are important predictors of their use of health services.

Concentration of Expenditures

As many analyses have found, payments for Medicare-covered services in any given year are highly concentrated among a small number of beneficiaries whose medical care is extremely expensive (see Figure 2). In 1997, the costliest 5 percent of beneficiaries consumed about half of total Medicare spending, and the costliest 25 percent consumed almost 90 percent. By contrast, the least costly 50 percent of beneficiaries consumed only 2 percent of all Medicare spending.

As might be expected, the spending on beneficiaries is strongly correlated with their use of inpatient hospital services. CBO's analysis of 1997 claims data suggests that for the most expensive 5 percent of Medicare beneficiaries, more than half of their spending went to pay for inpatient hospital services. By contrast, the least costly 50 percent of beneficiaries used virtually no inpatient hospital services—that is, nearly all of their spending was on outpatient and physician services. That correlation might suggest that beneficiaries who were hospitalized would be candidates for disease management. However, if those patients had already incurred significant costs by the

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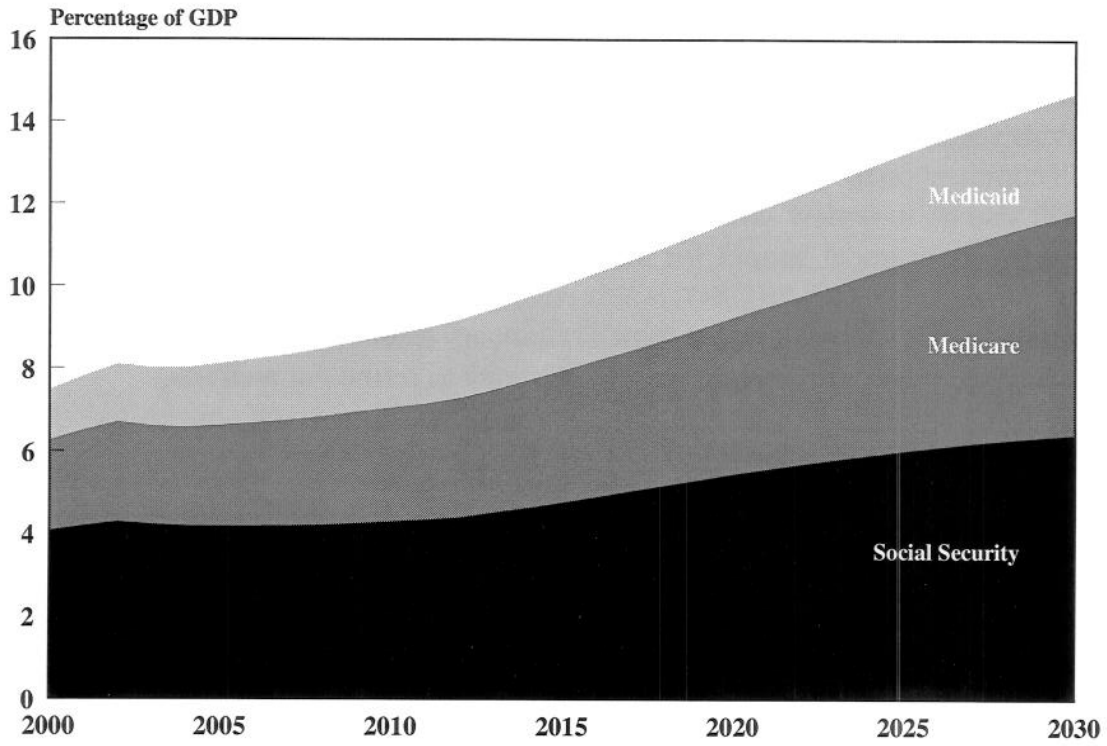
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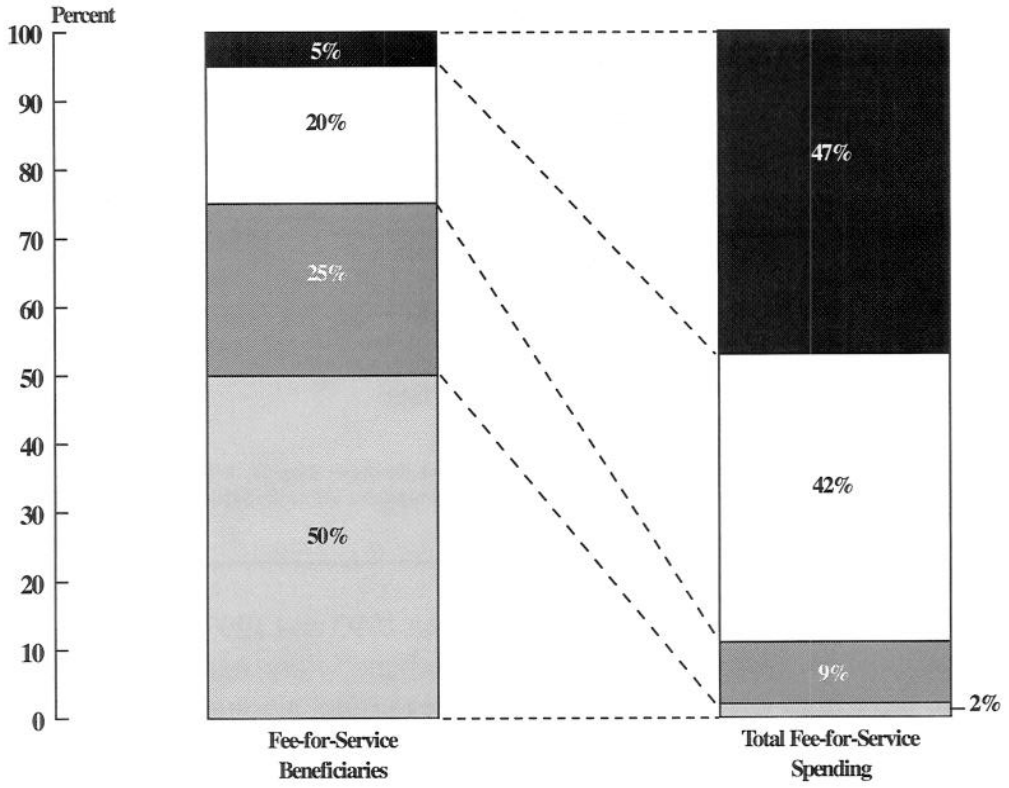
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Concentration of Expenditures

As many analyses have found, payments for Medicare-covered services in any given year are highly concentrated among a small number of beneficiaries whose medical care is extremely expensive (see Figure 2). In 1997, the costliest 5 percent of beneficiaries consumed about half of total Medicare spending, and the costliest 25 percent consumed almost 90 percent. By contrast, the least costly 50 percent of beneficiaries consumed only 2 percent of all Medicare spending.

As might be expected, the spending on beneficiaries is strongly correlated with their use of inpatient hospital services. CBO's analysis of 1997 claims data suggests that for the most expensive 5 percent of Medicare beneficiaries, more than half of their spending went to pay for inpatient hospital services. By contrast, the least costly 50 percent of beneficiaries used virtually no inpatient hospital services—that is, nearly all of their spending was on outpatient and physician services. That correlation might suggest that beneficiaries who were hospitalized would be candidates for disease management. However, if those patients had already incurred significant costs by the

FIGURE 2. DISTRIBUTION OF FEE-FOR-SERVICE MEDICARE SPENDING AMONG BENEFICIARIES, 1997



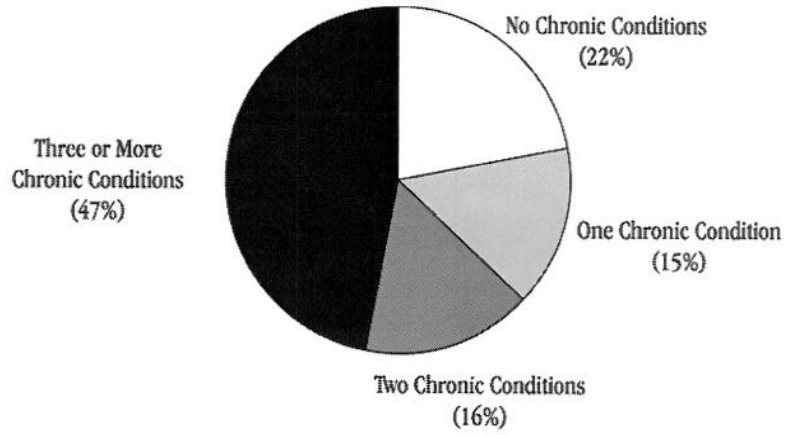
SOURCE: Congressional Budget Office.

time they were discharged or if their diseases had already progressed to a point where disease management interventions were less effective, then the savings that could be achieved would be limited. A key question, therefore, is how predictive is hospitalization of future expenditures.

Persistence of Expenditures

The degree to which Medicare beneficiaries continue to be expensive over time is an important factor in this discussion, for two reasons: first, because beneficiaries who are persistently expensive account for a large share of the program's costs, and second, because there is a longer window of opportunity to manage their costs. CBO's preliminary work has examined the issue by focusing on the most expensive 25 per-

FIGURE 3. PERCENTAGE OF MEDICARE BENEFICIARIES WITH CHRONIC CONDITIONS



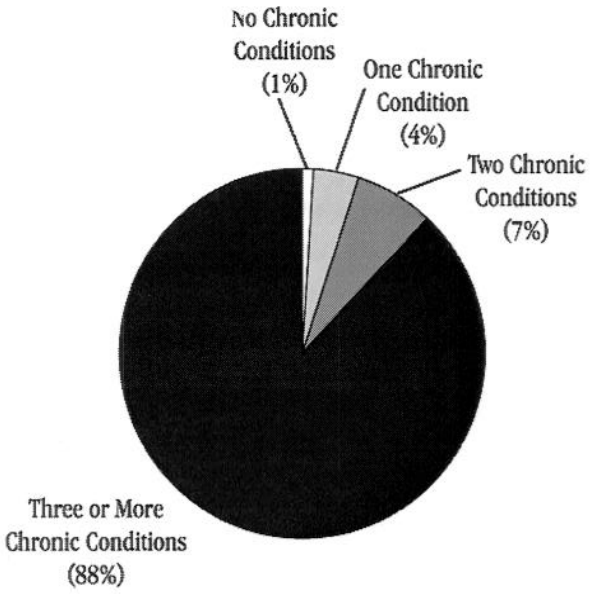
SOURCE: Congressional Budget Office based on the statement of Gerard Anderson, Director, Robert Wood Johnson Foundation, Partnership for Solutions: Better Lives for People with Chronic Conditions, before the Subcommittee on Health of the House Committee on Ways and Means, April 16, 2002.

cent of Medicare beneficiaries in any year between 1993 and 1997.[2] While such beneficiaries are more likely to die than is the average beneficiary, many of those who live continue to have high costs in later years. For example, among the most expensive one-fourth of beneficiaries in 1993, 13 percent were dead by January 1, 1994—a mortality rate three times that of the average beneficiary. Yet of those who survived, over half remained in the highest quartile of spending in the next calendar year—a rate twice as high as would be expected by chance.

Focusing in further on beneficiaries who were among the most expensive quarter of enrollees for two or more consecutive years allowed CBO to look at beneficiaries who were persistently expensive over time—and whose care might be amenable to better coordination. That group accounts for a large amount of Medicare spending. In its preliminary work, CBO found that from 1993 through 1997, such persistently expensive beneficiaries accounted for 19 percent of enrollees but 57 percent of Medicare spending. In other words, their spending was three times the average for all beneficiaries and nearly six times the average for beneficiaries who were not persistently expensive. Over that period, total Medicare spending amounted to $775 billion, which

2. To be considered persistently expensive, beneficiaries also had to be among the most expensive 28 percent of enrollees for the 1993-1997 period (who together accounted for 75 percent of Medicare spending in those years).

FIGURE 4. DISTRIBUTION OF MEDICAI DING BY NUMBER OF BENEFICIARIES' CHRONIC CONDITIONS



SOURCE: Congressional Budget Office based on the statement of Gerard Anderson, Director, Robert Wood Johnson Foundation, Partnership for Solutions: Better Lives for People with Chronic Conditions, before the Subcommittee on Health of the House Committee on Ways and Means, April 16, 2002.

means that spending on this persistently high-cost group totaled $442 billion. (Those figures are expressed in 1997 dollars.)

Clinical Characteristics

In general, Medicare beneficiaries are more likely than younger populations to have a chronic medical condition like diabetes or heart disease. In addition, Medicare beneficiaries are more likely to suffer from several chronic conditions at the same time. The presence of multiple chronic conditions is an important consideration because it is associated with a variety of poor health outcomes. Research performed by Gerard Anderson, of Johns Hopkins University and the Robert Wood Johnson Foundation, shows that only 22 percent of Medicare beneficiaries have no chronic conditions, while almost half have three or more chronic conditions (see Figure 3). Additionally, Anderson has shown that beneficiaries with multiple chronic conditions account for the vast majority of Medicare spending: beneficiaries with no chronic conditions account for less than 1 percent of total Medicare spending, whereas those with three or more conditions account for almost 90 percent (see Figure 4). (Those data cover

all spending for the two groups of beneficiaries, not just spending associated with their chronic conditions.)

To expand on the previous work in this area, CBO is in the process of examining beneficiaries who are persistently expensive over time to determine whether their clinical profiles match the profiles targeted by disease management firms. Preliminary findings suggest that persistently expensive beneficiaries (as defined above) are indeed more likely to have those profiles—that is, they are more likely than other beneficiaries to have been diagnosed with coronary artery disease, congestive heart failure, diabetes, chronic obstructive pulmonary disease, asthma, and end-stage renal disease. By itself, this finding would suggest that the disease management strategies developed for use in private health plans could also be applied to persistently expensive Medicare beneficiaries. However, other features of the Medicare population may complicate the picture. For example, persistently expensive Medicare beneficiaries are somewhat more likely to have been diagnosed with dementia—which could make it more difficult to apply strategies that relied on educating beneficiaries to manage their own care.

Because many persistently expensive Medicare beneficiaries have medical conditions for which care coordination programs exist, the presence of one of those conditions might be used as a method of identifying potential candidates for a Medicare-approved care coordination program. But CBO's preliminary research also indicates that the presence of a particular diagnosis alone may not effectively predict an individual's likelihood of becoming persistently expensive (that is, being among the most expensive 25 percent of beneficiaries in two or more consecutive years).

For example, although about half of the beneficiaries who are persistently expensive have coronary artery disease, only 35 percent of beneficiaries with the disease are persistently expensive. This suggests that other factors besides diagnosis would need to be used to target disease management interventions in the most cost-effective manner. Reflecting that fact, programs in the private sector have developed proprietary models that use information on a beneficiary's diagnoses, the types of services used, and measures of functional impairment to determine how likely the person is to incur high costs. Data used by disease management firms may also include information collected by contacting patients or their physicians. CBO intends to investigate the potential of such multidimensional models to identify Medicare beneficiaries who are likely to become high-cost patients.

EVIDENCE ON COST SAVINGS

Disease management firms serving enrollees in commercial health plans claim that their programs simultaneously improve quality of care and reduce costs for the population of patients that they manage. A recent report by the Employee Benefits Research Institute (EBRI), however, found that while case studies of particular programs have shown positive results, there is no conclusive evidence that disease management programs in general improve health or reduce costs in the long term. EBRI also concluded that improved health and cost-effectiveness may take from several months to a few years to become apparent in a disease management program, making it difficult to prove that particular health outcomes were the result of such a program. Given that uncertainty, CBO is currently reviewing the available studies of both disease and case management programs to examine the evidence on cost savings. (Those programs could also improve the health of enrolled beneficiaries, but CBO's analysis has devoted less attention to measures of quality.)

One reason for the difficulty in assessing the impact of disease management on costs is that the effect would be indirect. As discussed earlier, disease management firms directly affect only processes of care, such as increasing the number of patients who receive recommended screening tests. Those effects on process could be expected to improve health outcomes—for example, by reducing the number of heart attacks that occur—but the effects are either uncertain or could take several years to become evident. If the rate of heart attacks decreased, one might also expect rates of hospitalization to fall as well—and only at that point would cost savings be achieved. Of the studies that CBO has reviewed, most have examined how disease management affects the process of care; far fewer have explored the effects on health outcomes or on the use of health services.

Any study that sought to demonstrate cost savings would also have to address a number of important methodological issues. In particular, a well-designed study must compare patients who received the disease management intervention with similar patients who did not. Yet that standard might not be met, for several reasons. One reason is that if study participants were chosen on the basis of having particularly high costs in a previous period, their costs would be expected to fall regardless of whether they participated in a disease management program—a phenomenon known as regression to the mean. Alternatively, if the disease management program served all enrollees who wished to participate, their costs could be lower than those of nonparticipants simply because volunteers are likely to be healthier or to take a more active role in managing their own care. These problems could be addressed by assigning enrollees

randomly to treatment and control groups, but few studies have even attempted to use such rigorous methods.

For most studies of disease management, difficulties also arise in applying their results to Medicare. For example, few studies have examined an elderly population in a fee-for-service delivery system; instead, most research has looked at younger patients who also have prescription drug coverage. Drug coverage is an important element of those studies because data on drug claims are sometimes used to identify potential candidates for disease management and because some interventions monitor and encourage adherence to drug regimens. An additional difficulty is that few studies have looked at patients with multiple chronic conditions.

Another important difference between Medicare and private health plans that affects attempts to extrapolate research results is the duration of the average member's enrollment. Enrollees in employer-sponsored health insurance often switch health plans, encouraging a focus on short-term costs and savings. Because beneficiaries remain in Medicare for many years, longer-term savings for the program are more likely to accrue, but they could be partially offset by spending on other medical conditions that enrollees developed over the remainder of their life.

To address some of the limitations in the data on the effectiveness of disease management, the Centers for Medicare and Medicaid Services has been conducting demonstration programs using that approach. For example, CMS recently announced a three-year demonstration project mandated by the Congress under which several disease management organizations will develop strategies for managing patients with advanced-stage congestive heart failure, diabetes, and coronary heart disease. A particularly interesting aspect of the demonstration is that it will provide an integrated package of Medicare benefits, including coverage of prescription drugs for participating beneficiaries. You will receive detailed testimony on that project today, and I look forward to hearing more about its results and those of other demonstrations as they become available.

DESIGN ISSUES FOR A DISEASE MANAGEMENT BENEFIT

As policymakers consider options for incorporating disease management programs in Medicare, they will need to address a number of questions, including how beneficiaries would be identified and enrolled in the programs, how Medicare would pay for disease management services, and how it would capture any savings that resulted. Those

issues constitute the three major components of the budgetary impact that a disease management benefit would have.

Eligibility and Enrollment

The first issues to be decided in designing a disease management benefit in Medicare are how to identify the beneficiaries that should participate in the program and what approach should be used to enroll them.

Identifying Medicare Beneficiaries as Candidates for Disease Management Programs. Examining the practices of disease management firms suggests that at least three options exist for identifying potential candidates: using claims data on diagnoses or the use of medical services, relying on referrals from physicians, or contacting beneficiaries directly. (Those options could also be used in combination.) On the one hand, the third option could be administratively complicated and, like the option of physician referrals, might fail to identify many beneficiaries who could potentially benefit from disease management. On the other hand, claims data for fee-for-service Medicare enrollees have many limitations, including lags in reporting and limited incentives for accurate reporting of information that does not affect payments. Even if information about beneficiaries that would allow identification could be gathered, using the presence of a particular diagnosis as a criterion, as discussed earlier, would identify many beneficiaries who would not become persistently expensive. Alternatively, using data on hospitalizations could be more accurate but would come too late to permit effective intervention. Finally, since Medicare does not cover prescription drugs, there are no readily available data on their use by beneficiaries—a difficulty not faced by private health plans, which often use such data to identify candidates for disease management.

Enrolling Medicare Beneficiaries in a Disease Management Program. Once potential candidates have been identified, the next question is how to enroll them in the disease management program. Because this benefit could be made available to about 35 million beneficiaries in the fee-for-service program, the total number of enrollees in disease management could be substantial. In private-sector health plans, both active (opt-in) and passive (opt-out) enrollment methods are used. Programs using active enrollment generally offer more-intensive disease management interventions in which members must agree to participate; programs using passive enrollment provide the intervention to all eligible patients except those who elect not to participate. Programs using active enrollment generally have much lower participation rates, and some observers have noted that they may actually target people who are

likely to be taking an active role in their health care already and thus are not the beneficiaries who would be most helped by disease management. In Medicare, using a passive enrollment method would ensure the participation of beneficiaries for whom disease management would be most useful, but it would also raise the total cost of providing disease management services. For those reasons, it is unclear whether net savings would increase or decrease as enrollment in the disease management program rose.

Other important questions concern the choices offered to beneficiaries and the incentives they would have to enroll. For example, would Medicare choose a single disease management firm to serve all beneficiaries in a geographic area, or would beneficiaries be given a choice among several programs? Allowing beneficiaries to choose a program would increase the complexity of administering the benefit but at the same time allow competition among firms and be more consistent with the way beneficiaries receive other services in Medicare. Another question is whether beneficiaries would be given explicit incentives to enroll in disease management—either by reducing, below statutory levels, the cost sharing they face for currently covered services or by adding benefits that are not currently covered under the fee-for-service program. Providing such incentives would tend to increase enrollment but would also raise the government's cost per enrollee.

Paying for Disease Management Services

Policymakers have a wide array of options to consider in developing a system to pay for disease management benefits in Medicare. In any case, it will be necessary to determine a basic payment rate for the disease management services themselves. Those administrative payments could be adjusted on the basis of a disease management firm's performance in reducing the overall health costs of its enrollees. Alternatively, payments to those firms could reflect the cost of the health services that their enrollees use—that is, the firms would bear partial or full insurance risk for those costs.

Setting the Basic Payment for Disease Management Services. Typically, private-sector health plans pay for disease management services on a per-enrollee, per-month basis. But paying for services in that way requires defining the bundles of services that the disease management firm will provide and establishing a price for each bundle. To define such bundles, policymakers would need to establish a mechanism for determining the amounts and types of individual services (such as educating beneficiaries or monitoring physicians' adherence to treatment protocols) that each bundle should comprise. Another consideration would be the amount of flexibility disease

management firms should have in designing a unique package of services. That issue is especially important considering that the disease management industry is relatively young and rapidly evolving and that appropriate bundles of services could vary on the basis of a number of characteristics of beneficiaries.

Determining how to set an appropriate payment rate for each group of services would also be difficult. In developing other Medicare fee schedules, policymakers have used historical cost data to set both the individual payment rates and, in some cases, a global limit on payments—but obviously, such data would not be available for disease management services. Alternatively, payment rates could be established through a competitive bidding process. However prices were set, bundling services together would provide incentives for disease management firms to control the cost of the services in each bundle, but it might also give them a financial incentive to provide too little of each service within the bundle and to increase the number of bundles they provided. Given the difficulties involved in measuring outcomes, it would be hard to tell whether too many or too few services were being provided. An additional consideration is that if the costs per enrollee of providing a bundle of services differed substantially on the basis of beneficiaries' health status or other factors, Medicare might have to develop methods to adjust payments accordingly (as has happened with other payment systems in the program).

Adjusting Payments for Performance. One way to address the incentive problems discussed above would be to use a "pay-for-performance" model. In that type of payment system, the administrative fees that disease management firms received could be tied to their ability to reduce total Medicare costs for their enrollees below what they would have been in the absence of disease management. This option would differ substantially from the way that Medicare pays for most medical services but would closely match the way that private employers pay for disease management. In principle, the option could be structured to allow the government to "get its money back" if a disease management company failed to cut costs for its group of enrolled beneficiaries. However, defining an appropriate comparison group (that is, beneficiaries who were not enrolled in disease management but were similar to those who did enroll) would be difficult, for the reasons discussed earlier. In addition, measures of performance would need to be clearly defined, and the data required to allow CMS to determine whether performance objectives had been met would need to be collected and processed in a timely way.

Requiring Disease Management Firms to Bear Insurance Risk for Their Enrollees. Under this option, payments to disease management firms would be tied

even more closely to the health costs of their beneficiaries: the firms would bear risk not only for the administrative fees they received for delivering disease management services but also for the costs of other covered medical services (such as hospitalizations or emergency room visits) provided to their enrollees. This option would provide strong incentives for disease management firms to control costs, going beyond the types of contracts that are currently used in the private sector. Those contracts typically call for disease management firms to put their administrative fees at risk and require them to face the risk of not having their contract renewed, but they have not demanded that the firms share insurance risk with the enrollees' health plans.

To be willing to accept such risk in the Medicare program, however, disease management firms might want to have at least some degree of control over payments and access to doctors, hospitals, and other health care providers. (The means of exerting that control already exists in private health plans—the vast majority of which use some form of managed care—but is not present in the fee-for-service Medicare plan, which accounts for more than 85 percent of total program enrollment.) Such an approach would give disease management firms both the incentives and the tools to control costs, but it could meet with strong resistance from providers. At the extreme, this approach could require beneficiaries to enroll in an integrated health plan and might resemble a managed care model for delivering services.

Interactions with Traditional Fee-for-Service Payment Systems

Unless disease management firms had to bear the full insurance risk for all of the health services that their enrollees received, policymakers would need to consider how Medicare's current payment systems for medical services would affect the extent and nature of the cost savings that could be achieved by a disease management program. Disease management could save money for Medicare in two ways. First, it could reduce the number of bundles of medical services that Medicare currently pays for or change the mix of bundles that are provided. Savings gained from those approaches would accrue to Medicare automatically. Second, it could save money through mechanisms that would only cut the costs to providers of delivering the services but would not yield automatic savings for the program because of Medicare's payment structure. In that case, capturing any resulting savings would probably require additional legislation.

The following are examples of each option.

- Disease management could generate direct savings for Medicare by reducing expenditures for inpatient hospital services, in several different ways. One method would be to keep beneficiaries from needing to be hospitalized, thus averting a payment for the hospital stay. Another would be to reduce the rate of readmission of patients. Of course, providers could respond to a disease management program in ways that might offset those savings; for example, if admissions for heart surgery declined, admissions for elective surgery might increase.

- Other features of Medicare's payment systems might reduce the costs to providers of delivering services but not lead directly to a drop in Medicare's payments. In general, for inpatient hospital services, disease management interventions that reduced a patient's length of stay would not produce direct savings for Medicare since payments do not vary with length of stay. Similarly, interventions that reduced the number of home health visits that a beneficiary required would not shrink Medicare's payments because home health agencies are paid a fixed amount to cover all services provided during a 60-day episode of care. In those cases, providers' costs would be reduced, but additional legislation might be needed for Medicare to capture those savings—for example, legislation to reduce the annual updates in hospital payments below their statutory levels to recoup savings from reductions in lengths of stays.

CONCLUSION

My remarks today can be summarized as follows:

- Medicare's expenditures are concentrated on a small number of high-cost beneficiaries, some of whose high levels of expenditures persist over time.

- The disease management industry has developed programs that claim to improve the quality of health care services and reduce their costs, but because of the limited number of available studies and the methodological issues they raise, it is not yet clear whether those programs can improve health outcomes, much less produce long-term cost savings.

- Additional research is needed to learn how to apply disease management principles within Medicare. Some of those answers may be provided by the demonstrations currently being implemented by CMS.

- In addition, more-complete and timely data on Medicare beneficiaries' use of medical services would be helpful for examining the potential of disease management and might also be needed to successfully implement such a policy.

- In designing a disease management benefit, policymakers would need to address additional questions, including how to identify and enroll beneficiaries; how to pay for disease management services; how to ensure that the interventions are cost-effective; and how any savings from a disease management benefit might accrue, given the payment systems now used in the fee-for-service Medicare program.