

Disease Management in Fee-for-Service Medicaid Programs

Introduction

Between 2000 and 2003, Medicaid spending (federal and state) increased by about one-third—from \$205.7 billion to \$275.5 billion—largely as a result of enrollment growth fueled by the economic downturn, job loss, the erosion of employer-sponsored health insurance coverage, and rising health care costs (Holahan and Ghosh, January 2005).¹ This explosive growth caused fiscal problems for state governments faced with depressed revenues. Despite some positive indicators of economic recovery, 24 states expect to face potential budget shortfalls in FY 2007 (McNichol and Lav, 2006). Medicaid issues continue to be a key concern in several states for 2007, where at least 17 states will on Medicaid reforms and a reduction of the Federal Medical Assistance Percentage (FMAP) (National Conference of State Legislatures, 2006).

State Medicaid programs are increasingly turning to disease management (DM) as one potential way to reduce program costs² and improve the quality of care and health outcomes among fee-for-service and Primary Care Case Management (PCCM) populations.³ Although Medicaid managed care organizations (MCOs) have

a long history of providing DM to low-income parents and children (NGA, 2003), most chronically ill Medicaid beneficiaries receive their care in fee-for-service or PCCM environments and the provision of DM services in these environments is a more recent phenomena. For these reasons, the focus of this report is on DM services provided in fee-for-service or PCCM environments. As of 2003, more than 20 states were engaged in developing and implementing DM programs for their fee-for-service and PCCM populations (Gillespie and Rossiter, 2003).

This issue brief focuses on DM program design options and the challenges associated with the development, implementation, and evaluation of DM programs, thereby informing state policymakers and program administrators as they seek to establish DM programs that are responsive to their unique situations.

The Burden of Chronic Disease

The U.S. Population

Chronic conditions are those illnesses that last a year or longer, limit what one can do, and/or require ongoing medical care (Hwang, Weller, Ireys, and Anderson, 2001).⁴ Chronic diseases—such as asthma, heart disease, and diabetes—are among the most common and costly health

¹ Jointly financed by states and the federal government, the Medicaid program provides coverage of health services for low-income parents, children, elderly persons, and persons with disabilities.

² Examples of other cost saving initiatives used by state Medicaid programs include: preferred drug lists (PDLs); reduction in provider rates; and increases in beneficiary cost-sharing.

³ Primary Care Case Management (PCCM) programs are state-operated managed care

programs in which a primary care provider is contracted to approve and coordinate the care provided for assigned Medicaid enrollees (Schneider, Landon, Tobias, Epstein, 2004; Adams, Bronstein, and Florence, 2006).

⁴ Other definitions of chronic disease exist. For example, the U.S. National Center for Health Statistics defines chronic disease as one lasting three months or more, and cannot be prevented by vaccines or cured by medication.

problems, have a significant prevalence among all age groups, and are the leading causes of death and disability in the United States. These diseases, which accounted for 78 percent of the nation's health spending in 2001, affected the quality of life of 125 million Americans. The number is expected to rise to 157 million by 2020 (California Healthcare Foundation, 2004; Centers for Disease Control and Prevention, 2005). Figure 1 shows the burden of chronic illness by age in the U.S. in 2001.

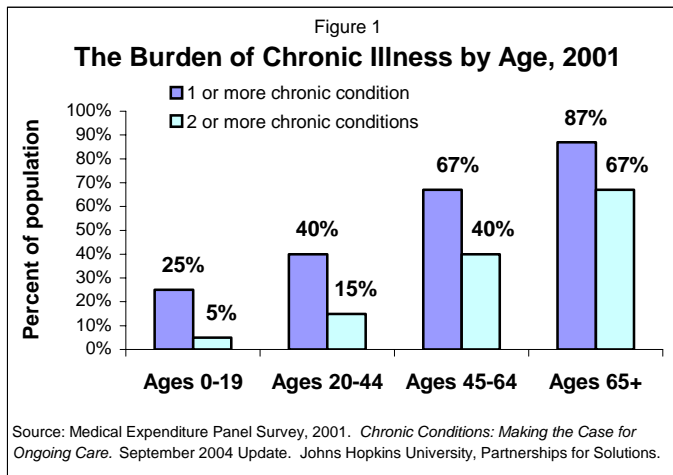
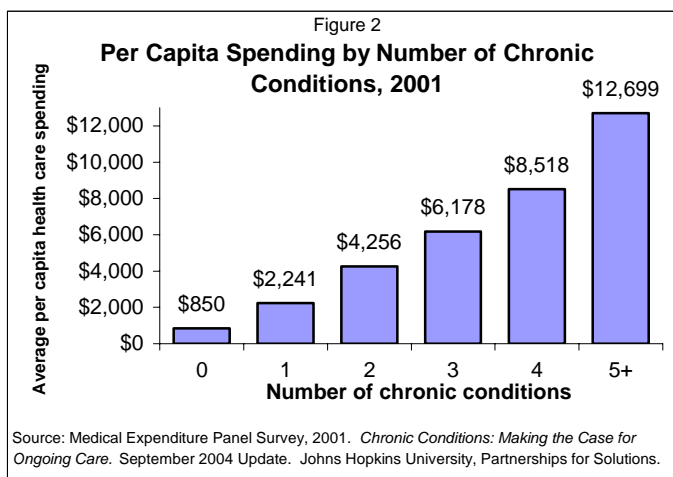


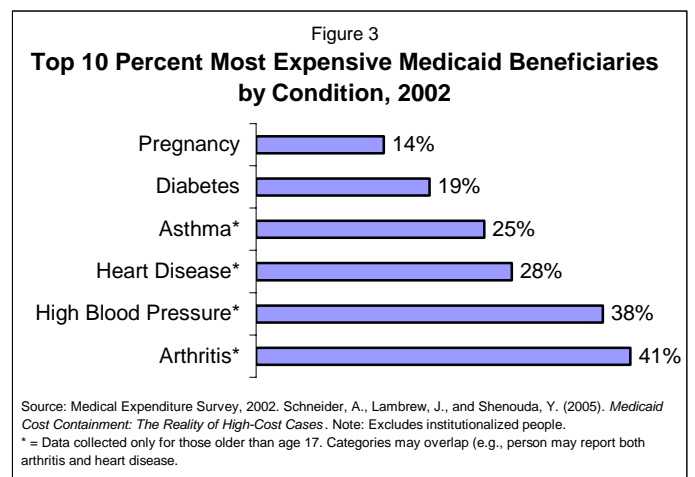
Figure 2 shows annual per capita spending by number of chronic conditions in 2001.



Medicaid Beneficiaries

In 2001, almost forty percent of Medicaid enrollees had one or more chronic conditions (Partnership for Solutions, 2002). The management of multiple chronic illnesses often requires several health care practitioners and multiple prescription drugs. Consequently, affected persons are at high risk for fragmented care, adverse prescription drug interactions, confusion about their care, multiple and costly hospitalizations, and poor health outcomes. In addition to their health effects, chronic illnesses exact a significant financial toll on state Medicaid budgets, accounting for 80 percent of Medicaid resources in 2001 (Partnership for Solutions, 2002; Bella, 2005). It is not surprising that state Medicaid programs have intensified their efforts to control health care costs and improve the quality of care. Average monthly spending for Medicaid beneficiaries with chronic or disabling conditions is significantly higher than medical expenditures for other beneficiaries.

Figure 3 shows health conditions of the top decile of Medicaid beneficiaries by health spending in 2002.



The Potential of DM Programs

One strategy that state Medicaid programs are using to improve quality of care, optimize health outcomes, and control program costs is to target beneficiaries with chronic illnesses for disease management (DM) programs.⁵ Although DM programs have been variously defined, in general they describe a systematic and comprehensive approach to managing chronic health conditions. The basic elements of the approach involve improvements in care coordination, controlling costs through the integration of components across the entire delivery system, and the use of targeted interventions (e.g., guidelines, protocols, information systems [IoM, 2001]). The following paragraphs describe the extent to which DM programs have been shown to improve quality and health outcomes, and to produce cost savings.

Improved Quality and Health Outcomes

Although several studies have demonstrated that specific disease management programs can improve the quality of patient care and health outcomes, the evidence is equivocal and can vary, depending upon the types of interventions (Wheatley, 2002; Short *et al.*, 2003). Significant improvements in quality of care and health outcomes as a result of DM have been identified for diabetes, heart failure, arthritis, and depression (Goetzel *et al.*, 2005). Other studies have found that for some of these same conditions (e.g., hypertension, diabetes, and heart failure), depending on

⁵ The DM industry has grown rapidly, with annual industry revenues increasing from \$85 million in 1997 to more than \$600 million in 2002 (Short, Mays, and Mittler, 2003).

the type of intervention, DM programs have no effect (Weingarten *et al.*, 2002).

In terms of effective DM program components, the Institute of Medicine found substantial evidence that “programs providing counseling, education, information feedback, and other supports to patients with common chronic conditions are associated with improved outcomes” (IoM, 2001). Other studies⁶ have found that interventions targeted toward providers resulted in improved patient outcomes (Wiengarten *et al.*, 2002).

Cost-Savings

While DM programs have shown some promise in improving quality of care for persons with chronic illness, determining whether the programs mitigate health care costs is not a straightforward analysis. Variation in program design, populations served, type and number of diseases managed, and differences in methodological approaches and interventions preclude the systematic analysis required to generalize among state programs (Gillespie and Rossiter, 2003). While some Medicaid DM programs report savings, others report losses (Wheatley, 2002). What is often said about the Medicaid program—when you’ve seen one Medicaid program, you’ve seen one Medicaid program—is also true of DM programs.

One factor that makes it difficult to determine whether DM saves money is failure to capture all costs when determining baseline expenditures against which to measure savings. Another difficulty is presented when program

⁶ Interventions for conditions, including coronary artery disease, depression, diabetes, hypertension, and rheumatoid arthritis/osteoarthritis.

administrators fail to account for all expenditures associated with an intervention when measuring savings. For example, reduced hospital admissions and emergency room use are often measured and not offset by other costs such as identifying and enrolling the target population or the cost of treating false-positive persons or newly discovered conditions. Finally, the statistical tendency of regression toward the mean (discussed below) can make it difficult to quantify any reduction in costs associated with an intervention. As states gain more DM program experience and become more familiar with the likely challenges and possible solutions, they will be better equipped to address these and other issues (Gillespie and Rossiter, 2003).

Authority and Funding for Medicaid Disease Management Programs

Federal and State Authority

State Medicaid agencies may establish *voluntary* DM programs through the state plan amendment (SPA) process as long as the programs are available to everyone meeting the criteria, are offered throughout the state, and do not restrict the beneficiary's choice of provider. States that seek to mandate enrollment, restrict eligible beneficiaries, implement the program in a limited geographical area, or limit freedom of choice among DM providers must use federal waiver authority in order to receive federal matching funds for their programs. While the SPA process enables states to develop DM programs fairly quickly, the waiver process gives states greater flexibility to design more focused programs (National Pharmaceutical Council, 2004).

In many instances, state legislatures are enacting laws *requiring* Medicaid agencies to establish DM programs. Some of these laws specify diseases that must be managed, include directives about program design, and mandate that the programs show savings. Table 1 describes some of these laws.

Federal Matching Funds

Disease management programs that qualify as a medical service under Medicaid are eligible for federal financial participation (FFP) at the state's regular Federal Medical Assistance Percentage (FMAP). To qualify as a medical service, DM programs must deliver direct services to beneficiaries using licensed practitioners. State contracts with disease management organizations, primary care case management providers, and individual fee-for-service providers qualify for federal matching funds as long as they meet these criteria (CMS, 2004; NPC, 2004).

Disease management programs that are limited to administrative activities by either the state or its contractors are not eligible for FFP at the state's FMAP. However, they do qualify for the federal administrative matching rate—50 percent nationally—for these activities. Examples of administrative DM activities include working with providers to promote use of evidence-based treatment guidelines; improve provider-patient communication skills; and provide routine feedback on beneficiaries' use of services (Centers for Medicare and Medicaid Services, 2004; NPC, 2004).

Table 1. State Laws Mandating Medicaid Disease Management Programs

<p>Connecticut</p>	<p>Conn. Acts, S.A. 03-3 (2003). Directs the Commissioner of Social Services to design and implement a disease management initiative and <i>permits</i> the Commissioner to contract with disease management entities.</p>
<p>Indiana</p>	<p>P.L. 212-2003 (2003). Directs the Office of Medicaid Policy and Planning (OMPP) to implement a disease management program (in collaboration with community health centers, federally qualified health centers, rural health clinics, local health departments, and public and private third party payers) that covers the following chronic conditions: asthma; diabetes; congestive heart failure or coronary heart disease; hypertension; and any other condition that the state department determines should be added.</p> <p>P.L. 48-2005 (2005). Kidney disease was added to the list of enumerated diseases that OMPP was <i>required</i> to include in its disease management program.</p>
<p>Iowa</p>	<p>Chapter 112, Section 12 (2003). Directs the Department of Human Services (DHS) to pursue chronic disease management to improve care and reduce costs under the medical assistance program. DHS is <i>required</i> to target beneficiaries who present the greatest opportunity to improve care and reduce costs. Targeted conditions <i>may</i> include: congestive heart failure, diabetes, and asthma. DHS is <i>directed</i> to solicit bids from vendors to manage the program, and is allowed to use savings from the program to pay implementation costs. Savings are required to be reported to the legislature.</p>
<p>New Mexico</p>	<p>N.M. Laws, Chap. 315 (2003). Directs the Human Services Department to provide or strengthen disease management programs for medical assistance recipients through closer coordination with primary care and safety net providers, to expand participation in disease management programs by health care providers, particularly in underserved areas, and to design a pilot disease management program for the fee-for-service population.</p>
<p>Washington</p>	<p>C7 Section 209, subsection 6 (2001). Directs the Department of Social and Health Services to design, implement, and evaluate pilot projects to assist individuals with at least three different diseases to improve their health, while <i>reducing total medical expenditures</i>. Projects <i>shall</i> involve: identifying persons with serious or chronic illnesses and working with individuals and care providers to improve adherence to treatment regimens.</p>

Major Components of Disease Management Programs

There are four core components of DM programs: claims data analysis, population selection, interventions, and quality measurement (NPC, 2004).⁷

- **Claims Data Analysis:** The first step in targeting a condition (or conditions) for DM is to examine medical claims data over a period of years. Claims data analyses are used to determine the most costly disease or combination of diseases, their prevalence, and other population characteristics. This information is a key factor in identifying the most costly disease categories, and is useful for targeting conditions for DM programs (NPC, 2004).
- **Population Selection:** Appropriate identification of potential participants is a critical component of DM program development. Populations should be targeted for DM programs based on the number of enrollees with the particular disease or high treatment costs associated with the disease; evidence of inappropriate utilization patterns that can be reversed; the availability of accepted treatment guidelines; a disparity in practice patterns indicating that practice guidelines are not uniformly adhered to; and, the ability to identify measurable outcomes (Wheatley, 2001). When
- analyzing claims data, it is important to keep in mind that they are often inaccurate for the purposes of identifying persons with a particular disease state, often producing false positives or false negatives (Wheatley, 2001).
- **Interventions:** Although states often tailor interventions to meet the unique needs of the targeted group, most DM programs include some or all of the following interventions: patient self-care education; counseling; call centers with patient support centers managed by licensed practitioners; appointment reminder systems; medication reminder systems; provider education on evidenced-based practices; and feedback systems that alert providers to possible adverse patient events (Gillespie and Rossiter, 2003).
- **Quality Measurement:** There are three components of quality measurement for DM programs: initial performance (process) indicators; intermediate performance (process) indicators; and outcome measures. Outcome measures are expensive and take longer to measure. Process indicators measure the initial and intermediate success of an action or intervention and are first-tier tools for assessing the quality and effectiveness of DM programs because they can be quickly and easily tracked. Examples of initial performance indicators in a diabetes DM program include provider and patient adherence to evidence-based guidelines such as annual foot and eye exam, annual kidney function and cholesterol

⁷ Both the National Committee for Quality Assurance and the Utilization Review Accreditation Commission accredit DM programs and have set standards for measuring and improving the quality of these programs (Short *et al.*, 2003).

analysis; and biannual hemoglobin A1c (blood glucose) measurement. Intermediate indicators include measuring changes in blood pressure and cholesterol, and hemoglobin A1c levels. Outcome measures for the same program would include the measuring incidence of blindness, leg amputation, end-stage renal disease, and death in the intervention group (Congressional Budget Office, 2004; NPC, 2004).

Medicaid Disease Management Program Design and Implementation

Design Options

Three Medicaid DM program designs have been identified: the *buy*, the *build*, and a *hybrid* (sometimes called the assembling design). The *buy* design involves a state contracting with an outside entity such as a disease management organization (DMO) or a pharmaceutical company.^{8,9}

The *build* design involves a state using its own resources to design, implement, and provide oversight for a DM program. In this case, states are responsible for full program operation and often accomplish

⁸ States are moving away from the type of buy design that involves pharmaceutical companies implementing the DM programs because they tended to focus on working with physicians to increase patient compliance with medicine regimens to an approach where nurse care managers help patients to identify problems, set goals, and support them through the process (Williams, 2004).

⁹ Another form of the *buy* strategy, not associated with a fee-for-service or a PCCM delivery model, involves states contracting with managed care organizations (MCOs) to provide the Medicaid benefit package to enrolled beneficiaries and to provide DM services to certain populations.

this by collaborating with other state agencies, community organizations, and providers.

The *hybrid* approach combines state oversight and decision-making authority with certain outsourced functions (Gillespie and Rossiter, 2003; NGA, 2003; Williams, 2004). In a hybrid approach, a state might retain responsibility for identifying the target DM population and outsource all other aspects of the program.

The decision whether to buy, build, or develop a hybrid DM program can be influenced by a variety of factors. States under fiscal pressure and without any DM infrastructure may elect a buy design to shift start-up costs to the vendor, or to make vendor fees contingent upon savings.¹⁰ Some states found that risk-based contracting led to adversarial relationships between the state and the contractor. (NGA, 2003; Williams, 2004). A state might also elect the buy design because it is targeting a complicated illness with which it has little or no experience and needs outside expertise (Gillespie and Rossiter, 2003).

States that have the time and inclination to take a longer view might use a build design because it allows them to tailor their programs to specific community needs, provides the opportunity to forge stronger relationships with other state and community partners, maximizes the state's control over the program (NGA, 2003; Williams, 2004), and allows the state to build upon an existing PCCM structure, if one exists. States have found that DM is especially compatible with PCCM systems because both models are designed to foster care coordination, maximize use of

¹⁰ Note that only the vendor's fees are at risk. The state must still pay for the beneficiary's care.

preventive services, and provide beneficiary support (Sprague, 2003). States may elect a hybrid approach to retain oversight and control over a program while outsourcing functions that are labor intensive or that the state has relatively little experience in managing. The advantages and disadvantages of buy, build, and hybrid designs are presented in tables 2, 3 and 4.

Implementation Challenges

States face many challenges as they seek to develop, implement and evaluate DM programs. The challenges fall into several categories: beneficiaries; providers; and program design and methods. Some of these challenges are described below.

Claims-Based Population Identification: Medicaid claims data are often inaccurate, leading to the identification and enrollment of false positive or false negative participants in a DM program. It is a waste of program resources to apply program interventions to persons who have been wrongly identified as meeting the intervention criteria, and a missed opportunity for those who should have been selected. One way to address this issue is to conduct pre-enrollment beneficiary screening (NGA, 2003).

Whether and How to Design Programs for Dual Eligibles: Persons eligible for Medicare and the full Medicaid benefit package are dual eligibles. An estimated 6.2 million dual eligibles accounted for 40 percent of all Medicaid expenditures in 2003, primarily for long-term care and prescription drugs (Holahan and Ghosh, July 2005). Even though Medicare pays the cost of in-patient hospital and out-patient medical care for dual eligibles, states have a strong interest in managing their chronic illness to avoid costly

institutionalizations or the need for home and community-based long-term care services, for which Medicaid pays. When Medicare began providing prescription drugs to dual eligibles on January 1, 2006, the program did not include a mechanism for state Medicaid programs to have information about their prescription drug use. Assisting DM program participants with managing and adhering to evidence-based prescription drug regimens is a key component of managing chronic illnesses and one of the cornerstones of DM programs. In light of this recent development, states will have to consider the feasibility of providing DM for their dual eligible populations.

Low Program Enrollment: States with voluntary DM programs have experienced low program enrollment, which reduces the opportunity to realize significant savings and impacts on health status. This situation may be addressed through aggressive outreach activities or by seeking federal waiver authority to mandate enrollment (CMS, 2004; NPC, 2004).

Selection Bias: Voluntary enrollment in DM programs can result in lower program costs and improved health outcomes, not because of the interventions, but because the self-selecting group is healthier or more interested in managing their care than those who do not voluntarily enroll. One way to address this issue is to obtain an approved waiver to mandate program enrollment (Congressional Budget Office, 2004).

Challenges Delivering Interventions to Low-Income Population: State DM programs face a variety of unique challenges as they seek to deliver interventions to a low-income population. For example, program participants may

not have telephones to receive reminder calls; they may move frequently, making it difficult to track them for home visits; or they may have language or literacy barriers. Program administrators must be creative and innovative in addressing these issues. For example, DM programs may need to emphasize in-person interventions instead of telephone interventions, hire and train bilingual staff, or provide alternatives to written materials (NGA, 2003).

Beneficiary Turnover: Medicaid beneficiaries frequently cycle on and off of the program due primarily to changes in income or asset levels. High turnover in DM programs can undermine potential savings and make it impossible to determine the efficacy of interventions and/or long-term cost savings (Florida Agency for Health Care Administration [AHCA], 2004). Unfortunately, there is not much that states can do to address this issue without inviting legal challenges.

Provider Resistance: Medicaid providers who believe that they are not being adequately reimbursed for their services may be reluctant to take on additional responsibilities associated with DM programs. One way states can address this issue is to consider paying an additional fee for provider participation. Another way is to identify non-financial incentives like offering continuing education credits for participation (NGA, 2003).

Measuring Impact of the Intervention: When all DM program participants are selected on the basis of their high program costs, subsequent measures of cost are not expected to be as extreme, regardless of whether they were exposed to the program interventions. This statistical tendency is known as regression toward the mean. The only way to eliminate the impact of

this phenomenon is to use a randomized control trial (RCT) design in which there are two identical groups and the intervention is administered to only one group (Gillespie and Rossiter, 2003).¹¹ The drawback of the RCT design is that it is expensive and time consuming. Another problem with measuring the impact of an intervention occurs when there are technological improvements in the treatment modality for a particular illness. In this case, it will be impossible to determine whether improvements are attributable to the DM interventions or improved treatment (CBO, 2004).

Co-Morbid Conditions: Patients with two or more chronic conditions may not experience positive effects from DM programs that are designed to manage only one of the conditions. The best approach to dealing with this situation is to develop programs (or contract with a vendor to design programs) that can manage multiple diseases (AHCA, 2004; NGA, 2003).

Coverage Limitations: Some patients might benefit from optional Medicaid services. For example, diabetics would benefit from the optional podiatry services. If a state does not offer the optional podiatry service, persons enrolled in diabetes DM programs would not have access to an evidence-based service under the clinical guidelines. One way to address this issue, while controlling costs, is to offer the service and limit it to participants in the DM program. This approach would require a federal waiver (AHCA, 2004).

¹¹Indiana was reportedly the first state Medicaid program to use a randomized control design in developing its DM program (Indiana State Department of Health, 2005).

Table 2. Advantages and Disadvantages of the Buy Design

Advantages	Disadvantages	State Examples
<ul style="list-style-type: none"> ▪ Less labor intensive process; fewer state resources needed ▪ Vendors experienced with disease management techniques ▪ Can be less costly; minimal to no start-up costs ▪ State can put vendors at financial risk for fees ▪ Allows for rapid start-up ▪ Vendor can provide expertise with health conditions that state is not comfortable managing ▪ State can use multiple vendors to address multiple needs ▪ Contracts can include performance guarantees 	<ul style="list-style-type: none"> ▪ Contracting process can be time consuming and tedious ▪ Requires continued investment of state resources for contract oversight ▪ May be difficult to identify vendor experienced with the service mix needed for the identified population ▪ May not offer opportunities to forge or strengthen relationships with other state and community partners ▪ When contracting with pharmaceutical companies, there is a risk that companies will focus the intervention on improved use of pharmaceuticals instead of taking a more comprehensive approach involving providers and patients 	<ul style="list-style-type: none"> ▪ Colorado ▪ Florida ▪ Indiana ▪ Missouri ▪ Oregon ▪ Washington

Source: Williams, C. (September 2004). *Medicaid Disease Management: Issues and Promises*. Washington, D.C., Kaiser Commission on Medicaid and the Uninsured.

Table 3. Advantages and Disadvantages of the Build Design

Advantages	Disadvantages	State Examples
<ul style="list-style-type: none"> ▪ Flexibility in tailoring program to fit and match the needs of the identified population ▪ Promotes collaboration among state agencies, community-based organizations, and providers ▪ State controls program vision, guidance, implementation, direction, and policies at all times ▪ State has direct access to all program data 	<ul style="list-style-type: none"> ▪ Costly (including high start-up costs) and time consuming ▪ No ability to outsource financial risk or deflect start-up costs ▪ State resources needed for administrative and program operation and oversight 	<ul style="list-style-type: none"> ▪ Indiana ▪ North Carolina

Source: Williams, C. (September 2004). *Medicaid Disease Management: Issues and Promises*. Washington, D.C., Kaiser Commission on Medicaid and the Uninsured.

Table 4. Advantages and Disadvantages of the Hybrid Design

Advantages	Disadvantages	State Examples
<ul style="list-style-type: none"> ▪ Allows states to maintain oversight and control ▪ Conserves state resources ▪ Allows state to build upon an existing PCCM structure 	<ul style="list-style-type: none"> ▪ Requires states to engage in the contracting process ▪ Requires state resources for contract enforcement and oversight ▪ May not offer opportunities to forge or strengthen relationships with other state and community partners 	<ul style="list-style-type: none"> ▪ Mississippi ▪ Virginia ▪ Washington

Source: Williams, C. (September 2004). *Medicaid Disease Management: Issues and Promises*. Washington, D.C., Kaiser Commission on Medicaid and the Uninsured.

Multiple Interventions: Typically, DM programs employ multiple interventions, which make it impossible to determine the relative effectiveness of each intervention. This problem can be significant for states seeking to maximize savings because they are unable to identify and eliminate interventions that are costly and ineffective (Sprague, 2003).

Conclusion

Despite limited evidence of effectiveness, state Medicaid programs are increasingly employing DM strategies among their fee-for-service and PCCM populations, hoping to improve quality and reduce costs (Short *et al.*, 2003). Because the use of DM is a relatively recent approach to cost control among fee-for-service and PCCM populations, and because program administrators are in the beginning stages of understanding the challenges associated with DM programs and their possible solutions (NGA, 2003; Williams, 2004), it may be too soon to judge whether they will ultimately achieve their dual objectives (Gillespie and Rossiter, 2003). If, over time, states begin to realize significant financial benefits from DM, more drastic cost saving approaches, such as benefit reductions and increased beneficiary cost sharing, could be forestalled.

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