Beyond Managing Medicaid Costs: Restructuring Care

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GROWTH IN MEDICAID EXPENDITURES HAS OUT-
paced all other spending in the health care sector. Total Medicaid spending increased from \$25 billion in 1980 to approximately \$144 billion in 1994; between 1990 and 1992, it grew at the rate of 28 percent per year (Tudor 1995). This phenomenal growth originated from complex, multiple factors that extend beyond the health care system, including the expansion of Medicaid eligibility and the epidemic of AIDS (Wade and Berg 1995). State spending on Medicaid reached an average of 20 percent of state budgets by 1994, thus crowding out states' abilities to fund discretionary programs and to develop their infrastructure (Holahan et al. 1995; Kelly et al. 1995). The states have responded to this fiscal challenge most often by facilitating the enrollment of their Medicaid populations into managed care, thereby restricting freedom of choice, and also increasingly by restructuring their Medicaid programs through the development of Section 1115 waiver applications (Riley 1995). By 1996, 40 percent of Medicaid beneficiaries were enrolled in managed care comprising more than 500 plans (Kaiser Commission on the Future of Medicaid 1997). (See Rosenbaum

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and Darnell [1997] for a recent review on Medicaid Section 1115 waiver applications.)

Overview of the Maryland High-Cost Patient Project

After implementing a primary care “gatekeeper” managed care system for Medicaid recipients in Maryland in the early 1990s, Nelson Sabatini, who was secretary of health at the time, became concerned that the system was not addressing the most significant underlying drivers of health care costs for this population. Between 1986 and 1991, Maryland’s Medicaid expenditures increased 28 percent (from \$1 billion to \$1.32 billion), while its share of the total state budget grew from 10 percent to an all-time high of 14 percent. Expenditures for the disabled accounted for approximately 57 percent, and outlays for the elderly made up 7 percent of the increase in total Medicaid spending during this period. The remaining 36 percent of growth was due to the increasing numbers of women and children covered by Medicaid as a result of federally mandated expansions in coverage and an economic recession (Maryland Department of Health and Mental Hygiene 1992).

Further data analysis revealed that approximately three-quarters of Medicaid spending was generated by 10 percent of the Medicaid patients who used services. In the fall of 1993, the Robert Wood Johnson Foundation awarded a grant to the Maryland Department of Health to study the identity of these patients and to devise options for preventing or, better yet, managing their costly health problems. Under this grant, the claims data on these most expensive enrollees were analyzed to uncover utilization and morbidity patterns; medical records were reviewed, providing case studies on over 2,000 patients; and interviews were conducted with providers, patients, and families.

Who Are the High-Cost Patients?

Patients were considered to be “high cost” if their annual expenditures fell into the top 10 percent of all Medicaid enrollees who generated a paid claim during the fiscal year. In FY 1993, this threshold was \$8,300 in total annual Medicaid payments. Because not all enrollees use health

services in a given year, these high-cost patients make up 9.5 percent of the total population enrolled in Medicaid. They account for 77 percent of the state's total Medicaid payments.

Aged or Disabled

Eighty-eight percent of high-cost patients are in Medicaid eligibility categories for the aged or disabled. Although the majority of Medicaid enrollees are in the Aid for Families with Dependent Children (AFDC) category, this group constitutes only 12 percent of the high-cost patients (fig. 1). Eligibility categories for the aged and disabled include people receiving Supplemental Security Income (SSI), disabled persons not receiving SSI, and aged individuals not receiving SSI. Forty-two percent of high-cost patients are age 65 or over. Forty-three percent of high-cost patients are between the ages of 21 and 64. These elderly and nonelderly adults account for 85 percent of expenditures for high-cost patients. The remaining high-cost patients are children from the time of birth through 17 years of age (fig. 2).

Forty-four percent of Maryland's high-cost patients receive care in nursing homes. These institutionalized patients account for 47 percent of the Medicaid expenditures for high-cost patients and 36 percent of

FIG. 1. Distribution of high-cost Medicaid patients by eligibility status for FY 1993 (N = 47,737). Source: Maryland Department of Health and Mental Hygiene (1997, 5).

FIG. 2. Distribution of high-cost Medicaid patients by age for FY 1993 (N = 47,737). Source: Maryland Department of Health and Mental Hygiene (1997, 8–9).

Maryland's total Medicaid expenditures of \$1.75 billion. The majority of these institutionalized patients are elderly (84 percent). The average monthly cost for the elderly in nursing homes is \$2,572; for the non-elderly it increases to an average of \$3,987 per month.

Fifty-six percent of high-cost patients live in the community rather than in nursing homes. They account for 53 percent of Medicaid expenditures for high-cost patients and 42 percent of Maryland's total Medicaid expenditures. The majority of these patients (91 percent) are *not* elderly.

Repeated Hospitalizations

Hospitalizations are largely responsible for the costs of patients living in the community. Almost 70 percent of high-cost patients who are not in a nursing home are hospitalized during the year, and of those with one admission, 64 percent are readmitted. Inpatient diagnostic information for patients who were admitted and readmitted was examined to identify the most frequently occurring diagnoses. Patients with inpatient admissions are most frequently diagnosed with symptoms of respiratory disease, serious mental illness (affective psychoses, schizophrenia), drug

dependence, alcohol dependence, diabetes, disorders of short gestation, heart diseases, infections, and injuries. The list of most frequent diagnoses for patients with hospital readmissions is similar.

In an earlier study conducted for the Robert Wood Johnson Foundation by the Economic and Social Research Institute (ESRI), repeated hospitalizations had been identified as a potential area for reducing costs through improved management (Tilman et al. 1992). The ESRI team had found a “revolving door” pattern of repeated admissions for Medicare patients who were characterized as having complex medical conditions and poor social supports. The ESRI study suggested that earlier identification of high-risk patients at the time they are hospitalized, in conjunction with better aftercare management, might reduce repeated readmissions. Using the Maryland Medicaid claims data, we were able to verify that this pattern of repeated hospitalizations was occurring in the population of Medicaid high-cost patients. We found that patients with the following diagnoses had relatively high volumes of admissions and frequent readmissions relative to admissions:

- Respiratory system—50 percent of patients with readmissions had symptoms of respiratory disease, compared with 30 percent of all patients with admissions
- Psychoses—25 percent of patients with readmissions had psychoses, compared with 15 percent of all patients with admissions
- Drug dependence—23 percent of patients with readmissions had a diagnosis of drug dependence, compared with 11 percent of all patients with admissions
- Alcohol dependence—18 percent of patients with readmissions had a diagnosis of alcohol dependence, compared with 9 percent of all patients with admissions
- Diabetes—15 percent of patients with readmissions had a diagnosis of diabetes, compared with 8 percent of all patients with admissions
- Asthma—12 percent of patients with readmissions had a diagnosis of asthma, compared with 6 percent of all patients with admissions

Chronic Disease and Disability

Both ambulatory and inpatient Medicaid claims of high-cost patients who were not elderly, not on Medicare, and not in an HMO or a nursing

home were grouped by diagnosis, based on the codes listed in the ninth revision of the International Classification of Diseases (ICD-9). Eighty-seven percent of such adults (18 to 65 years) can be classified into one or more of the following broad categories: severe mental illness, substance abuse, high-risk pregnancy, trauma/central nervous system (CNS) diagnoses, HIV/AIDS, and chronic medical conditions (fig. 3). These broad, general categories for grouping ICD-9 codes were developed in consultation with specialists from the University of Maryland Medical School, the Johns Hopkins Medical School and School of Public Health, and the Maryland Department of Health and Mental Hygiene. Severe mental illness includes diagnoses like psychoses, personality disorders,

FIG. 3. Distribution of high-cost adult Medicaid patients by diagnosis category in FY 1993 (N = 15,167). Users may appear within multiple categories. ▨ = users; ■ = costs. *Source:* Maryland Department of Health and Mental Hygiene (1997, 6).

and schizophrenia. Chronic medical conditions include asthma, bronchitis, emphysema, chronic obstructive pulmonary disorder, diabetes, hypertension, heart disease, congestive heart failure, cancer, and sickle cell anemia. Trauma/CNS includes head or spinal cord injury, paralysis, Parkinson's disease, multiple sclerosis, cerebral palsy, muscular dystrophy, and others. Substance abuse includes drug and alcohol psychoses and dependence syndromes, among others. Seventy percent of such children (17 and under) can be classified into the broad categories of prematurity, mental illness, and special needs (fig. 4). The special needs category covers mental retardation (except mild), spinal cord injuries, cerebral palsy, muscular dystrophy, and congenital anomalies (like heart defects), cystic fibrosis, diabetes, asthma, cancer, HIV/AIDS, and others.

Comorbidity

Categories were not mutually exclusive; that is, a person could have a diagnosis in more than one category. Our analyses indicate that almost all of the adult, high-cost patients who are not in nursing homes have multiple health problems. Figure 5 shows the percentage of adults who have diagnoses that fall into at least two of our broad categories. It is noteworthy that approximately 15 percent of these patients have both mental illness and chronic medical conditions, 10 percent have mental illness and problems with substance abuse, and 8 percent have substance abuse problems and chronic medical conditions.

FIG. 4. Average monthly costs of high-cost children on Medicaid during FY 1993 (N = 5,368). *Source:* Maryland Department of Health and Mental Hygiene (1997, 6–9).

FIG. 5. Percentage of adult, high-cost patients in two diagnostic groups during FY 1993 (N = 15,157). Patients may be categorized under multiple diagnoses. *Source:* Maryland Department of Health and Mental Hygiene (1997, 8).

Distribution of Medical Expenditures

We examined costs to Medicaid of patients in these broad diagnostic categories. Premature infants have the highest average cost per month among high-cost Medicaid patients. Children with special needs and/or mental health problems are also among the categories with the highest average cost per month. Although there are relatively few high-cost children, many will live long lives. The cumulative cost of their care can be considerable, underscoring the importance of investing in strategies to prevent prematurity, mental health problems, and other disabling conditions of childhood (see fig. 4). Among adults, the highest costs, on average, are those entailing trauma/CNS problems like head and spinal cord injuries (fig. 6). Although a similar analysis of Medicaid health expenditures in five states by Kronick, Zhou, and Dreyfus (1995) was restricted to the permanently disabled population, the distribution of costs among broad diagnostic categories was similar. For adult, high-cost patients living in the community, we further examined the average

FIG. 6. Average monthly costs of high-cost, adult Medicaid patients in FY 1993. *Source:* Maryland Department of Health and Mental Hygiene (1997, 6).

cost per month according to the combination of broad comorbidity groups. Even among these high-cost patients, the variability in cost by mix of comorbidity was striking (fig. 7).

Social Factors Contributing to High-Cost Illness

Patients considered to be particularly likely to incur high costs have social risk factors like homelessness and poor social support systems in addition to their medical problems. Early in this project, we conducted a pilot study at a midsized general hospital in Baltimore in order to clarify our understanding of the factors contributing to high medical costs. All Medicaid admissions to this hospital were reviewed by a physician. Over an eight-week period, beginning in mid-February 1994, 399 cases were screened. Of these, 25 percent were judged to be at high risk of generating high costs in the near future. The high-risk patients had the following characteristics:

- 44 percent did not comply with instructions for taking medication and did not keep their appointments for follow-up visits
- 8 percent were homeless
- 7 percent remained hospitalized because there were no appropriate placement facilities

FIG. 7. Average monthly costs of high-cost, adult Medicaid patients with comorbidity in FY 1993 (N = 15,157). Patients may be listed under multiple diagnoses. *Source:* Maryland Department of Health and Mental Hygiene, Maryland Medicaid Information System.

- 7 percent had inadequate home support either for personal care or for home health services

The pilot study highlighted the role of substance abuse as a risk factor for high-cost patients. Almost a third of the Medicaid admissions in the pilot study had alcohol or substance abuse problems. Substance abuse was also a problem for pregnant women. Over a third of pregnant women on Medicaid who were admitted to this hospital during the study period were using drugs. The contribution of substance abuse to high medical costs is confirmed by a recent study (Soderstrom et al. 1997) revealing that 60 percent of trauma patients admitted through Maryland's Shock Trauma Unit suffer from serious substance abuse.

The extent to which social problems and substance abuse contribute to hospital admissions for high-cost Medicaid patients was further detailed through the case studies we reviewed subsequent to the pilot study. These case studies dramatically illustrated how lack of social and financial resources, combined with chronic medical problems, contribute to medical costs. For example, we found homeless, diabetic patients who were discharged to the streets during the winter when temperatures were below freezing and who were then readmitted for frostbite. We saw young children who were hospitalized for severe behavioral problems (such as setting fires and threatening to kill their caretakers). The early years for these children were characterized by parental neglect and substance abuse.

Noncontinuous Medicaid Eligibility

Thirty percent of high-cost Medicaid patients were not continuously eligible for Medicaid during the year we studied, according to data from the Medicaid claims. We were not able to determine the cause of discontinuous eligibility from the claims. However, the case studies revealed that many of these high-cost patients were not on Medicaid when they entered the hospital, but, rather, became eligible later as a result of their high medical expenses. The phenomenon of medical "spend-down," a term used to describe Medicaid eligibility that stems from high medical bills, has far-reaching implications for managed care, public policy, and prevention strategies. Providers express particular concern about patients who cycle on and off Medicaid because they are unable to pay for

preventive care. These patients are uninsured and only eligible for Medicaid when they are hospitalized and incur high medical expenses.

People in nursing homes represent another group that “spends down” its financial assets until Medicaid eligibility is achieved. Unlike the other groups mentioned, once nursing-home patients become Medicaid eligible they are likely to remain in the nursing home and on Medicaid for the rest of their lives. A precise determination of the frequency with which these types of “spend down” occur was beyond the scope of this study.

Dual Eligibility

Approximately 46 percent of the high-cost Medicaid patients are also eligible for Medicare. In this study, we were not able to determine how much Medicare paid for these patients. For these “dual eligibles,” Medicare is generally considered the primary health insurer. Medicaid assists by paying the Medicare premium, the copayments, and the deductibles, in addition to benefits like prescription drugs and long-term care. In a recent report, Judy Feder writes:

Dual eligibles are diverse, very vulnerable and very costly. Relative to other Medicare beneficiaries, they are disproportionately poor, non-white, female, under age 65 with disabilities or over age 85, living alone or living in nursing homes, and in need of assistance in one or more activities of daily living. The sixteen percent of Medicare's beneficiaries that are dual eligibles accounted for 30 percent of Medicare spending—over \$50 billion—in 1995. Similarly, the seventeen percent of Medicaid beneficiaries that are dual eligibles account for 35 percent of Medicaid spending—also over \$50 billion—in 1995. (Kaiser Commission on the Future of Medicaid 1997)

End of Life

Because so much attention has been focused on costs associated with the last year of life (see, for example, Experton et al. 1996), we considered whether the high-cost Medicaid patients simply reflected the high costs of terminal care. As far as we could tell, this was generally not the case. Using data from FY 1993 for patients with one or more admissions at six Baltimore city hospitals and who had incurred total annual Medicaid costs of \$20,000 or higher, we examined the percentage of patients who died by the number of inpatient admissions. Overall, only 4 percent of

the patients in this sample died. As might be expected, people with many hospitalizations were more likely to die than those with fewer hospitalizations. However, even among patients with six or more admissions, less than 10 percent of high-cost patients died (fig. 8). Although patients who died had higher costs on average than those who survived (fig. 9), we concluded that the overwhelming majority of these high-cost patients were either NOT at death's door, or, if they were, medical interventions saved their lives.

Principles of Managed Care

Because the high-cost patients account for over three-quarters of Medicaid spending, it is useful to consider how well the fundamental principles of managed care apply to these patients.

FIG. 8. Mortality by number of admissions for the high-cost Medicaid population (\$20K and up) in Maryland during FY 1993. The patient population of continuous and noncontinuous enrollees (non-Medicare) was drawn from the Johns Hopkins and the University of Maryland Medical Schools, and Bayview, Maryland General, and Franklin Square Hospitals. ■ = patients; —■— = mortality. Source: Maryland Medicaid Information System (PHSA 1994).

FIG. 9. A comparison of the average costs by number of admissions and mortality for the high-cost Medicaid population (\$20K and up) in Maryland during FY 1993. The patient population of continuous and noncontinuous enrollees (non-Medicare) was drawn from the sources listed in Fig. 8. ■ = deaths; ▨ = survivors. Source: Maryland Medicaid Information System (PHSA 1994).

Defined Population

A principle that is central to the concept of a health maintenance organization (HMO) is that of a defined population (Ellwood and Lundberg 1996). The organization was originally designed to provide health care and preventive services to a group of individuals over years. It is true that duration of enrollment for segments of the Medicaid population can be forecast with some certainty, as in the cases of institutionalized and noninstitutionalized elderly and those who are covered by SSI. However, 30 percent of the AFDC population is replaced yearly (Freund and Hurley 1995), and welfare reform may increase the turnover among this population. Furthermore, as our data suggest, patients who suffer catastrophic illness are frequently not enrolled in Medicaid at the onset of their medical problems. For example, an analysis of the most severely head-injured patients referred through Maryland's Shock Trauma Unit for inpatient rehabilitation revealed that, of those for whom

Medicaid became the primary payor, over 80 percent were not on Medicaid rolls at the time of their injuries (Weinrich 1995). Similarly, patients presenting with the onset of AIDS and other infectious consequences of drug abuse are unlikely to be enrolled in Medicaid at the time of their initial presentation. Thus, preventive measures cannot be confined to the Medicaid population, but, rather, must include the entire population of the state in order to be effective in reducing Medicaid expenditures for catastrophic illness. Similarly, after hospital discharge, patients with catastrophic illness may be disenrolled from Medicaid. Some may reapply for enrollment, which entails a lag in coverage. Both discontinuity in Medicaid eligibility and changes in HMO enrollment create difficulties in maintaining continuity of care and preventing secondary complications of illness, which may result in unnecessary and costly rehospitalizations to treat, for example, the development of decubiti, urosepsis, and pneumonias in spinal-cord-injured patients.

Maintenance of Health

The second principle involves the maintenance of health. The overwhelming experience of managed care to date has been with commercial enrollees, who constitute a young, working, fundamentally healthy population (Morrison and Luft 1990). Even when the analysis is limited to current Medicaid enrollees, thereby excluding those who become eligible through the medically indigent/medically needy mechanism, patients enrolled in Medicaid HMOs generate 23 percent higher medical costs than an age- and sex-adjusted population enrolled in commercial HMOs (Welch and Wade 1995). Indeed, data emerging from commercial HMOs are beginning to highlight the role of chronic disease as a driver of health care costs. Fishman et al. (1997) found that members with one or more chronic conditions generated yearly costs for the Group Health Cooperative of Puget Sound that were from 80 to 300 percent higher than the average costs of members without chronic illness. A recent nationwide study concluded that "among adolescents, risk behaviors for chronic disease are common and inversely related to socioeconomic status" (Lowry et al. 1996). Thus systems designed for the needs of healthy, employed populations may fail to promote health and prevent disease among the Medicaid population.

Medical Care

The third principle addresses the issue of the “organization” in the HMO. HMOs were established to provide medical care, not social services. In a commercially insured population, individuals are gainfully employed and enjoy a wide range of formal and informal social supports. The theory that an organization can deal effectively with these individuals’ health problems in relative isolation makes some sense. In contrast, because of the strict limitation on income for Medicaid eligibility, almost none of the Medicaid population is employed. The limited economic and social supports for this population create medical care delivery problems beyond those incurred by the commercially insured population. Consider, for example, the issue of housing. Management of diabetes, which might be straightforward under ordinary circumstances, can be nearly impossible for patients who live alone or in shelters and have no regular diet or social supports. Level of social support is a major prognostic factor for recovery from stroke, with the result that socially isolated patients are at particular risk for poor outcomes (Glass et al. 1993). Indeed, sustained poverty produces significant degradations in cognitive, physical, and psychological functioning (Lynch, Kaplan, and Shema 1997). Thus the combination of morbidity, poverty, and lack of social supports observed in high-cost/high-risk Medicaid patients pose exceptional challenges for medical management.

Experience with Medicaid Managed Care

Early Experiences

How have these issues played out, to date, in states that have implemented managed care for Medicaid? Early evaluations of Medicaid HMOs were not promising: few were able to provide care at less cost than conventional Medicaid programs; some became insolvent (Freund et al. 1989). A randomized trial to evaluate the effectiveness of a Medicaid HMO in New York demonstrated that plan savings were attributable to selection bias and that the state actually lost money overall (Leibowitz, Buchanan, and Mann 1992). However, the populations enrolled in these plans were relatively small, numbering approximately 25,000, and the data on savings, if the plans were implemented to scale on a statewide basis, were not available. After a comprehensive survey of Medicaid managed care

programs, Hurley, Freund, and Paul (1993) concluded that "it is still unclear whether real resource use has changed under these models."

Statewide Initiatives

Nonetheless, states have moved forward with expansion of managed care for the Medicaid population. As of this writing, 49 states have waivers to require all of their AFDC Medicaid beneficiaries to enroll in managed care plans, and 25 states are enrolling elderly and disabled Medicaid recipients in managed care plans. (For an ongoing update of managed care activity in Medicaid, see www.kff.org.) Of the states that have already moved their Medicaid populations into managed care, only Arizona has demonstrated consistent cost savings. Arizona, however, has unusually restrictive eligibility criteria for its Medicaid program, and only the AFDC population demonstrated consistent savings under managed care (McCall et al. 1995). Tennessee moved its entire Medicaid population into managed care quickly and in considerable turmoil. First-year fiscal performance yielded a \$99 million deficit, with hospitals and managed care organizations also reporting considerable losses, and the state also decreased subsidies for uncompensated care and graduate medical education (Mirvis et al. 1995). Kentucky has had a Medicaid case management program for some years, with no measurable effects on inpatient hospitalization or pharmacy utilization (Miller and Gengler 1994). The introduction of Medicaid managed care in Florida appears to have improved access for many beneficiaries; however, quality of care has been a major concern, and the program has been beset by scandal (Gold, Aizer, and Salganicoff 1997).

Experience of Special Populations in Generic Systems of Care

There is little evidence that, in the absence of services designed to meet their needs, moving specialized populations of patients into generic managed care systems will yield major cost savings or improvement in quality of care. A retrospective study of prenatal care delivered to Medicaid recipients in fee-for-service and managed care plans found no difference in birth outcomes (Krieger, Connell, and LoGerfro 1992). Coffey et al. (1995) were unable to detect any differences in therapy or medi-

cation costs for Medicaid patients with diabetes and hypertension who were randomized between fee-for-service and capitated health plans. Health care utilization and outcomes also appeared identical between groups of patients with rheumatoid arthritis treated in fee-for-service and prepaid group practice settings (Yelin, Criswell, and Feigenbaum 1996). A randomized trial between managed care and fee-for-service for frail elderly Medicaid recipients in Florida (Buchanan, Leibowitz, and Keesey 1996) demonstrated that managed care was successful in reducing members' likelihood of using care, but not in reducing the costs of treatment, once initiated. In reviewing the performance of managed care for the Medicaid population, Freund and Hurley (1995) note that reported cost savings have not been rigorously evaluated and that selection bias of enrollees has been a significant problem in evaluating program performance. This conclusion is strengthened by a recent study of utilization of intensive care units (ICUs), which examined commercially insured versus managed care populations (Angus et al. 1996). While patients covered under managed care consumed fewer ICU resources, this appeared to be largely attributable to differences in case mix.

Although the enrollment of Medicaid beneficiaries into managed care plans for medical care in New York has not demonstrated any decrease in access to care or in patient satisfaction (Sisk et al. 1996), a multisite study of chronically ill patients (Ware et al. 1996) found that elderly and poor chronically ill patients had significantly worse health outcomes under managed care than in fee-for-service medical plans. Evaluations of access and satisfaction among disabled Medicare beneficiaries enrolled in HMOs are just beginning; however, preliminary results suggest that access problems are more common in this population than in nondisabled Medicare beneficiaries (Gold et al. 1997). These results support the perspective that qualitative differences in costs and outcomes for patients with disabilities or chronic illness will require more than merely changing financing mechanisms. Indeed, a recent micro-economic analysis of capitation arrives at the same conclusion (Emery, Fawson, and Herzog 1997).

Experience with Specialized Systems and Programs

In their substantive review of the experience with Medicaid managed care, Freund and Hurley (1995) recommend the development of special sys-

tems for “distinct subgroups with disparate and often highly specialized needs.” The experience with Medicaid managed care systems designed for specialized populations, while mixed, is considerably more promising than the experience of specialized populations enrolled in generic managed care systems. With the caveat that some of the programs we reviewed have not received as rigorous an evaluation as we might wish, the results achieved in this area appear promising. For example, a statewide diabetes managed care program for Medicaid recipients in Maryland showed savings, reductions in hospitalizations, and high rates of patient satisfaction (Stuart 1994; Maguire et al. 1996; Frye 1997). Another statewide Medicaid managed care initiative that has reported cost savings is an intensive case management program known as the Maryland Medicaid High Cost User Initiative (Center for Health Program Development and Management 1994; LoBianco, Mills, and Moore 1996). In 1995, it was estimated that every \$1.00 the state spent on the High Cost User Initiative generated \$2.63 in Medicaid savings (Center for Health Program Development and Management 1996).

The Medicaid mental health managed care plans of two statewide programs have undergone rigorous evaluation that has produced mixed results. In Utah, cost savings after the first year of operation appeared to be substantial (Christianson et al. 1995); however, more recent analysis suggests no overall effect on mental health expenditures (Stoner et al. 1997). Massachusetts has had a managed mental health program for a longer period and has been able to cut expenditures for this population by 22 percent with no overall decreases in quality or access (Callahan et al. 1995).

The Community Medical Alliance (CMA) in Boston entered into a capitated, but limited, risk-sharing arrangement with Massachusetts Medicaid to care for patients with severe disability or AIDS (Master et al. 1996). This project saved money and reduced inpatient utilization substantially. The Medicaid capitation rate was set at 95 percent of the estimated fee-for-service equivalents covering medical services (but not oral pharmacy, personal care, and dental). Actual costs averaged approximately \$700 per enrollee per year less than the capitation. Quality of care was good as measured by high ratings for patient satisfaction and low rates of potentially avoidable complications. For example, inpatient days for pressure sores in quadriplegics were reduced, and the absolute incidence of admission for pneumocystis pneumonia in AIDS patients declined.

The issue of designing clinically efficient systems for patients with comorbidities is a significant one. At least one well-studied example of a specialized program operated in the context of a prepaid capitated program for Medicaid recipients illustrates that such programs are feasible. The ACT (Assertive Community Treatment) program provides mental health services for homeless persons in Baltimore with severe and persistent mental illness. Over 70 percent of its participants not only suffered from the social risk factor of homelessness but also were diagnosed with serious substance abuse. Participants used significantly fewer psychiatric inpatient days, fewer emergency room visits, and more outpatient psychiatric visits than control subjects. The ACT participants also spent significantly more days in stable housing and had significantly greater improvements in life satisfaction and perceived health status (Lehman et al. 1997).

We have personally reviewed small-scale programs designed to address the social and medical problems of high-cost Medicaid populations that appear to have demonstrated cost savings and improved health outcomes. These include the Comprehensive Women's Center, the Kennedy Krieger Lead Program, and the Community Health Worker Program. The Comprehensive Women's Center at the Johns Hopkins Hospital Program for Alcoholism and Other Drug Dependencies instituted a weekly support group for pregnant, substance-abusing women in conjunction with obstetric services at the prenatal clinic. Babies born to women attending the support group had significantly higher birthweights than those of nonattenders, and costs to Medicaid (from delivery to one month postdelivery) for infants born to women who attended the support groups were almost one-third the costs for infants of nonattenders (Svikis et al. 1998). The Kennedy Krieger Lead Program in Baltimore has developed a multifaceted approach to the problem of lead poisoning in children, a major preventable cause of serious neurological disability. Program statistics for the year ending June 30, 1995, reveal that 85 percent of the 158 children attending more than one appointment in the lead program had reductions in serum lead levels. Fifty-eight percent of participants were placed in lead-free environments. Treatment costs averaged only 60 percent of an historically comparable population (Davoli 1998). The Community Health Worker Program (CHW), an innovative intervention developed by Donald Fedder at the University of Maryland, uses local residents (backed by a medical team) to provide outreach and case management for patients who are noncom-

pliant in self-management of diabetes or hypertension. Relative to a comparison group, these patients have lower Medicaid costs and improved outcomes (Fedder et al. n.d.).

How Can Managed Care Improve Outcomes and Reduce Costs for Patients with Chronic Illness?

In what ways do generic systems fail to address the needs of special populations, and what can be done about it? In their discussion of care systems for patients with chronic illness (although concerned largely with implementation for commercially insured populations), Wagner, Austin, and Von Korff (1996) suggest that four deficiencies in the delivery of medical services lead to medically poor and cost-ineffective outcomes:

(1) delay in the detection of complications or declines in health status because of irregular or incomplete assessments or inadequate follow-up; (2) failures in self-management of the illness or risk factors as a result of patient passivity or ignorance stemming from inadequate or inconsistent patient assessment, education, motivation, and feedback; (3) reduced quality of care due to the omission of effective interventions or the commission of ineffective ones; and (4) undetected or inadequately managed psychosocial distress.

The Medicaid population presents special challenges within each category of problems. Certainly, the Medicaid eligibility patterns described in the first section of this article are seemingly designed to promote delays in addressing medical problems and to ensure that, once detected, follow-up procedures are inadequate. We referred earlier to the fact that the poverty, lack of education, and risk behaviors in the Medicaid population also create particular challenges for providers seeking to encourage patient self-management. Action on the third and fourth points raised by Wagner, Austin, and Von Korff (1996) has just begun to influence medical practice. The realization that chronic illness contributes greatly to medical costs (e.g., Fishman et al. 1997) has led providers and commercial insurers to begin to develop "disease management" programs. Specialized programs have been developed for

asthma, diabetes, arthritis, hemophilia, and other conditions (Kaplan and Gill 1996; Smith, Wong, and Eichert 1996). Writing from experience with the exceptionally successful Community Medical Alliance, Master et al. (1996) provide a blueprint for how these approaches might be extended to the Medicaid population.

Master et al. (1996) conclude: "As political and financial pressures accelerate the movement of Medicaid recipients with disability into prepaid managed care, delivery systems that do not redesign services to meet the needs of people with disabilities but only use traditional gate-keeper models are likely to do more harm than good. . . ." They enunciate a series of principles for designing care systems for these patients:

- integrate case management with clinical decision-making in new clinical roles
- maximize the accessibility of providers who know the patient
- create environments that foster strong personal relationships between patients and clinicians
- help clinicians provide services in the most appropriate setting; allow prompt allocation of needed resources
- use care providers with special knowledge of patients' conditions
- use early interventions aggressively to limit complications of chronic illness
- use risk-adjusted capitation to allow innovation for serving people at varying levels of need

Risk Adjustment

The crucial financing issue facing health policy makers is how to reward health plans that develop innovative programs to provide care for patients with high-cost illnesses. Such plans face the challenge of attracting more high-cost patients if they are successful in providing high-quality care for them. There is widespread agreement that risk adjustment can play a major role in creating the appropriate financial incentives. A comprehensive discussion of risk adjustment is beyond the scope of this article. (See Lee and Rogal 1997 for a general introduction and selected references.) However, for the present discussion, crucial questions are whether appropriate and stable risk adjustors can be developed for the Medicaid population and whether the documented comorbidities in the

high-cost population vitiate this approach. Kronick et al. (1996) found that expenditures for Medicaid recipients with permanent disabilities were actually far more predictable than those received by Medicaid recipients without disability. They were able to construct risk adjustors for the former that may be applicable for constructing payment systems. In line with our findings, they also concluded that comorbidities can markedly increase expenditures for patients. Nonetheless, their risk adjustors were stable and, especially when used with concurrent expenditure data, reached a high level of predictive accuracy.

Small demonstration projects to test the application of risk-adjustment methods for Medicaid recipients with chronic disease (Kronick, Zhou, and Dreyfus 1995; Kronick et al. 1996; Kronick 1997) are now underway. As states move toward enrolling their disabled SSI recipients into managed care along with their AFDC populations (Somers and Brodsky 1997), an examination of the successes and limits of demonstration projects using risk-adjusted capitation for defined populations will become more critical. (See www.chcs.org/bhsgrnt2.htm for a listing of recently completed and ongoing projects funded by the Robert Wood Johnson Foundation under the initiative entitled "Building Health Systems for People with Chronic Illness.")

Integrated Clinical and Financial Management Information

The adoption of computerized medical records and management information systems that integrate clinical and financial information should contribute to the evolution of more sophisticated risk-adjustment methods, as well as quality assurance and medical management strategies that are sensitive to the problems of patients with chronic diseases and disabilities. Weed and Weed (1994), in their trenchant critique of current medical practice and its use (or, more correctly, nonuse) of information, point out that our current information system's capacity to deliver clinically relevant information to physicians about their patients on an ongoing, longitudinal basis is virtually nil. Under these circumstances, management of populations of complex patients in a coordinated fashion is extremely difficult because the clinical information necessary to manage them is simply not available, either for individual

practitioners or for group analysis. As sophisticated information technology becomes more refined and widely used, management of high-cost patients with multiple comorbidities should also improve. In the meantime, programs must rely on the current capacities of small groups of clinicians to coordinate activities and manage clinical information.

Conclusions

There is no reason to expect, and every reason to doubt, that changes in health care financing alone for Medicaid will result in major improvements in health status or cost savings for states. Certainly, the thorny technical issues of coordinating financing and incentives for providers to beneficiaries who are dually eligible for Medicare and Medicaid must be surmounted. In addition, many of the economic and social factors contributing to high costs for the Medicaid population are beyond the scope of medical systems, acting unilaterally, to solve. Steps to break the cycle of poverty and ill health of the Medicaid population must include integrated strategies that address problems like housing, illiteracy, substance abuse, and domestic violence. Efforts to prevent injuries in order to reduce Medicaid costs require population-based approaches like gun control, lower speed limits, and helmet laws. Disability prevention policies must include private employers as well as the public sector. Health insurance coverage (through Medicaid or some other source) must be stabilized for people with chronic or catastrophic illnesses in order to facilitate effective disease management. Public health policies like these have considerable humanitarian and cost-saving potential, but they extend well beyond the scope of Medicaid managed care.

The major potential cost savings for Medicaid managed care lie in more effective management of chronic medical problems. As we prepare for the millennium, we note projected increases in the proportion of patients with chronic illness. It is sobering to note that the limitations in financing and delivery of care for patients with chronic illness in prepaid health plans identified over ten years ago (Schlesinger 1986) have not yet been substantially remediated. Current financing approaches (which are generally not risk adjusted) provide a strong incentive for providers to reduce access and trim services for high-cost populations. Invested with responsibility for Medicaid, which serves a population that carries a relatively high burden of chronicity, states

should give special attention to monitoring the impact of managed care on the chronically ill and disabled.

The development of new financial incentives, such as risk-adjusted capitation, to reward providers who deliver efficient, quality care for special populations should set the stage for improvements in the management of chronic disease. With appropriate incentives, providers can develop new, more flexible models of care. These models have the potential to provide care in community-based settings, intervene early and aggressively to prevent avoidable complications, integrate funding sources to attack underlying problems, and develop new resources in communities to improve health and build capacity. To realize this potential, providers and policy makers can benefit substantially from two sources of information: (1) integrated clinical, social, and financial information relevant to the management of the specific patient population being served; (2) thorough knowledge of the approaches employed by specialized systems and programs that successfully deliver care to high-cost patients.

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