TennCare—Medicaid Managed Care in Tennessee in Jeopardy

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TennCare, the statewide Medicaid managed care system implemented in Tennessee on January 1, 1994, sought to reduce state and federal healthcare expenditures while enhancing access to and quality of care. TennCare currently covers 1.32 million enrollees (25% of the citizens of Tennessee), including more than 520,248 citizens previously not covered by health insurance. It is one of the largest Medicaid managed care enterprises in the nation and the only program to cover uninsurables regardless of income. Utilization of preventive and primary care services has increased, and selected measures of quality of care have improved. Program costs from 1994 through 1998 rose at a rate below that of overall US Medicaid costs during the same period, resulting in modest savings. However, managed care plans, hospitals, and individual providers continue to report substantial fiscal losses, and managed care organizations—including the 3 largest plans in the program—have closed, been placed under receivership, or threatened to withdraw from the market. Furthermore, safety net hospitals, academic medical centers, and community mental health programs have faced financial cutbacks that have limited their ability to serve the remaining uninsured as well as the insured. Because of these fiscal difficulties, the TennCare program is now in significant jeopardy despite its important clinical successes. Major structural and fiscal changes will be required if the program is to continue to enhance services and remain financially viable. This report focuses on TennCare's successes and failures to offer lessons for Medicaid managed care programs nationwide.

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Managed care programs for Medicaid recipients have expanded rapidly. Forty-nine states now rely on some form of managed care for their Medicaid programs, and enrollment in managed care structures has risen from 9.3% of the Medicaid population in 1991 to 55.8% in 2000.[1] By converting to managed care plans, states seek to reduce program costs, enhance access to and quality of care, and reduce direct governmental intervention in healthcare.[2,3] Future growth is likely since the Balanced Budget Act of 1997[4] eliminated the need for states to obtain waivers from the Health Care Financing Administration to implement managed care alternatives for most recipients.

Tennessee implemented TennCare as a managed care replacement for its Medicaid program on January 1, 1994.[5-7] TennCare now finances the healthcare for almost one fourth of the overall population[8] and half of the newborns[9] in Tennessee.

During the years since its inception, TennCare has been studied, applauded, criticized, and modified. In this report, we summarize the origins and evolution of the TennCare program and focus on its successes and failures at this critical juncture. We also assess its impact on 3 critical components of healthcare systems—access, quality, and costs of care. TennCare sought to enhance all 3 components simultaneously, ie, to expand access and improve quality while reducing costs. In this report we assess the impacts of TennCare on the state's healthcare delivery systems. Although these impacts were not explicitly addressed by the state's objectives and assessment criteria, they are critical to understanding TennCare's successes and failures.

Other authors have concentrated on the political, legal, financial, and structural aspects of TennCare.[10-12] In this review, we focus on the substantial positive and negative impacts of the program on health and on the health systems in Tennessee. Because Medicaid managed care plans differ widely from each other in

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eligibility, enrollment, services provided, and management, reviews of individual programs such as TennCare provide important lessons that may instruct the future growth of this expanding form of healthcare delivery system.[13]

··· THE BEGINNINGS OF TENNCARE ···

TennCare was implemented to contend with the rapidly escalating costs of Tennessee's Medicaid program and the rising number of citizens without health insurance coverage.[5,6] Before TennCare, from fiscal year (FY) 1988-1989 to FY1992-1993, the overall costs of Tennessee's Medicaid program increased at an annual compound rate of 25.5%, and the percentage of enrollees rose at an annual average rate of 13.1%. In addition, approximately 675,000 citizens remained without health insurance, including many who were unable to obtain health insurance because of medical conditions.

To meet these challenges, the state applied for a waiver to conduct a Medicaid managed care demonstration project. The plan was designed to expand health insurance coverage for up to 400,000 Tennesseans previously without coverage and to improve the quality of care to all enrollees while reducing state and federal costs by $1.6 billion and $3.2 billion, respectively, during the proposed 5-year demonstration period.[5] The state proposed to (1) enroll each Medicaid beneficiary as well as many uninsured or uninsurable citizens into one of a limited number of competing managed care organizations (MCOs) and (2) pay the MCOs on a capitation basis for providing a broad range of inpatient and outpatient healthcare services.

The waiver request was submitted on June 16, 1993; approved by the Health Care Financing Administration on November 18, 1993, as a 5-year demonstration project; and implemented only 43 days later, on January 1, 1994. The plan was developed and implemented largely through executive action and did not go through the normal legislative process. The political background and the factors leading to the rapid implementation have been analyzed elsewhere.[6,10] A 3-year extension was approved in 1998.

A second phase of the plan, known as TennCare Partners, was implemented on July 1, 1996.[7] The program expanded TennCare to care for all behavioral health conditions by assigning each recipient to a behavioral health organization in addition to their MCO. These behavioral health organizations are paid by the state on a capitation basis to provide comprehensive behavioral health services.

TennCare's Accomplishments

The initial implementation of TennCare and TennCare Partners was turbulent.[6,7] Patients were confused about which MCO they were in and which providers were in which MCO; physicians, patients, and other groups filed suits against implementation plans; and immature administrative and finance systems precluded efficient operations. It is now (at the time of this writing) more than 6 years later—an adequate period to evaluate progress after a challenging start-up.

Access to Care

Access to care includes the number of persons covered by insurance; the range of services ensured; and, most important, the real utilization of needed healthcare services. The original proposal for TennCare had an enrollment target of 1.775 million, which included all citizens of Tennessee eligible for Medicaid under either Aid to Families with Dependent Children or the chronically disabled programs and all who were uninsurable because of medical conditions. The remaining enrollment slots were to be offered to those without access to employer- or government-sponsored insurance. Both the uninsured and the uninsurables were eligible for coverage regardless of income (although enrollees with incomes above poverty levels were subject to premiums and copayments). These criteria were developed to make TennCare the broadest Medicaid managed care reform plan in the nation and would, according to the state, ensure health insurance coverage to approximately 98% of Tennesseans.

Limitations were, however, quickly imposed. The enrollment target was quickly reduced to 1.5 million because of concerns that the proposed budget would be inadequate, with the state being at risk for the entire overrun.[10] Enrollment of the uninsured was constrained, and, finally, in January 1995, stopped. Subsequently, the program was cautiously expanded to include select groups of uninsured citizens, including uninsured children younger than 19 years and workers losing insurance because of plant closures.

As of March 30, 2000, enrollment was 1,316,216—approximately 1 in 4 Tennesseans: 795,968 Medicaid eligibles (60.5%) and 520,248 uninsured or uninsurables (39.5%).[8] This enrollment in Medicaid managed care is the second largest in the nation, exceeded only by California.[1]

Despite the large number of non-Medicaid enrollees in TennCare, coverage remains far from universal. The percentage of Tennesseans who were uninsured, according to the US Census Bureau, decreased from 13.2% in 1993 (before TennCare) to 11.5% in 1999.[14] Substantially lower uninsured rates—8.9% in 1993 and 7.2% in 1999—have been reported from telephone surveys conducted by the University of Tennessee.[15] Although rates by either measure declined, the level of uninsured remains well above the 2% goal included in the original TennCare plan according to either set of data.

The reduction in the percentage of uninsured individuals using either the Census Bureau (1.7%) or the University of Tennessee (1.7%) estimate does not correspond to the more than 500,000 "previously uninsured" that are enrolled in TennCare. Instead, the number of non-Medicaid TennCare enrollees includes (1) many who had commercial insurance that had limited coverage and who enrolled in TennCare as "uninsurable" and (2) Medicaid eligibles who enrolled as "uninsurables" to avoid financial scrutiny[16] or some other undesirable feature of Medicaid eligibility. Because of this crowding-out effect,[17] the real number of Tennesseans who became newly insured as a result of TennCare is not known.

The benefit package guaranteed to TennCare enrollees is considerably more expansive than that provided by Medicaid[6] and by many commercial plans. TennCare includes 18 services not required by Medicaid regulations, including unlimited acute inpatient hospital, physician, and outpatient care and pharmacy coverage. Services have continued to expand. For example, limits on substance abuse treatments have been removed, and all deductibles have been eliminated for all previously uninsured children enrolled in TennCare.

The final component of assessing access is the real availability and actual utilization of needed services for those with insurance coverage. The state proposed that TennCare would enhance access to needed care and limit overutilization through adherence to managed care practices. Initial anecdotal

Table 1. Studies of Quality of Care Before and After TennCare

Indicator and Study	Study Design*	Study Scope	Control Group?	Improved?
Preventive care				
Mammography[18]	Claims data/ repeated cross-sectional	Statewide	No	Yes
Mammography[22]	Chart review, cohort	Single managed care organization	No	Yes
Prenatal care[9,23]	Claims data/ repeated cross-sectional	Statewide	No	No change
Well-child visits[18]	Claims data/ repeated cross-sectional	Statewide	No	Yes
Acute disease care				
Acute myocardial infarction (coronary revascularization)[24]	Chart review, cohort	Two-state hospital sample	Yes	Yes
Chronic disease care				
Diabetes (avoidable hospitalizations)[25]	Claims data/ repeated cross-sectional	Statewide	No	Yes
Diabetes (glucose control, etc)[26]	Chart review, cohort	Single managed care organization	No	Yes
HIV/AIDS (appropriate drug use, emergency department use, hospitalizations)[27]	Claims data/ repeated cross-sectional	Statewide	No	Yes
Outcomes				
Low birth weight and infant mortality[9,27]	Claims, birth, and vital records data/repeated cross-sectional	Statewide	No	No change, slight improvement
HIV/AIDS mortality and AIDS conversion rate[27]	Claims and vital records data/ repeated cross-sectional	Statewide	No	Yes

*"Repeated cross-sectional" refers to a retrospective study design in which repeated measures are obtained over time on the entire population meeting study criteria in each period of study. "Cohort" refers to a retrospective cohort study design.

reports suggested that TennCare reduced rather than enhanced access. Newspapers recounted stories of patients unable to receive care because of enrollment and other administrative snafus; because of the need to switch or the inability to identify primary care providers; and because of the limited numbers of specialists who participated in TennCare.[6]

Available data now support the conclusion that TennCare has expanded true access to care for those included in the program (**Table 1**).[15,18-20] Increases in the number of mammograms and well-child visits, and reductions in emergency department visits and hospitalizations for ambulatory care–sensitive conditions, suggest high levels of access to outpatient services.[18,19] In the telephone surveys reported by Fox and Lyons,[15] the percentage of Medicaid eligibles receiving care in physician offices or clinics increased from 84% to 91% from 1993 to 1997, whereas the percentage seeking initial care in hospitals decreased from 14% to 7%. Continuity of enrollment in an insurance plan was also increased; as reported by Cooper et al,[20] the percentage of infants with gaps in coverage during the first year of life decreased by 23%.

Other surveys, however, documented that many enrollees did not understand or use the system appropriately; in 1995, eg, 37% of TennCare recipients did not know the name of their primary care provider, and only 25% of those who did had ever visited him or her.[21]

Quality of Care

The state proposed that the quality of care provided to those previously covered by Medicaid or without insurance would improve as a result of primary care gatekeeper systems emphasizing prevention and coordinated care. Specific importance was placed on improved outcomes of pregnancy, routine screenings and periodic treatments for children, and preventive services. It is, however, also important to examine the effects of managed care on the acutely ill and the chronically ill, who are particularly vulnerable to changes in healthcare delivery systems.

Studies[9,18,22-29] comparing quality of care, differences in outcomes, or both before and after the onset of TennCare are shown in Table 1. All the studies reported either improvement or no change in the quality of care. Most of these longitudinal studies relied on Medicaid/TennCare billing data to assess changes in healthcare utilization. All the studies except one relied on historical controls and are therefore subject to bias resulting from broad historical trends unrelated to TennCare. Improvements in rates of mammography, glucose control in patients with diabetes, and HIV/AIDS care and outcomes may solely reflect historical trends observed throughout the healthcare system. Improvements in rates of well-child visits, coronary care, and asthma care are particularly dramatic, however, and most likely reflect changes induced by TennCare. Evidence for quality in preventive care includes increases in the number of children having well-child care (increasing from 12% to 41%)[18] and high rates of childhood immunization (94% of those younger than 24 months had the required immunizations within the past year).[29]

Short- and long-term care for the acutely ill and the chronically ill also seem to be improved. A study[24] of care of patients after acute myocardial infarction demonstrated that TennCare enrollees underwent revascularization procedures within 30 days of infarction as often and had the same health outcomes as did those with private insurance; both measures were better for TennCare enrollees than for Medicaid enrollees. Improved management for chronically ill patients is suggested by reductions in emergency department use and hospital admissions for ambulatory care–sensitive diagnoses.[23,25,28-30] Overall, emergency department visits for enrollees younger than 65 years decreased by 44% from 1993 to 1996. For enrollees aged 20 years and younger with asthma, the number of emergency department visits decreased by approximately 63% from 1993 to 1996, and the number of hospital admissions declined by 32%.[28]

Another area in which quality has been assessed is prenatal and perinatal care. Despite concerns that managed care would reduce prenatal care, Ray et al[9] reported that managed care did not impact access to appropriate services. No significant changes were detected between 1993 and 1995 in the proportion of enrollees with late prenatal care (16.2% vs 15.8%), inadequate prenatal visits (5.9% vs 5.9%), low birth weight (9.4% vs 9.0%), and death within 60 days of birth (0.6% vs 0.6%). State-commissioned data[23] suggested slight improvements in these and related measures over time up to 1997.

Patient satisfaction, another component of quality of care, has been good, as evidenced by results of focus groups[31] and surveys.[15,32,33] In a 1997 telephone survey,[15] 66% of heads of households receiving TennCare rated care as excellent or good compared with 58% in 1993 (before TennCare). However, approximately one third of former Medicaid enrollees were less satisfied with TennCare than

with the previous fee-for-service system. An additional survey[33] of patients hospitalized for pediatric or selected adult conditions documented levels of satisfaction among those with TennCare equal to those of patients with fee-for-service plans.

The group that was previously uninsured, ie, the "expansion group," has specifically been shown to have better access to care, more use of preventive services, and greater satisfaction with care, as well as lower levels of unmet needs, than those who remained uninsured.[34] Based on a 1998/1999 telephone survey, 92% of the expansion group but only 71% of the uninsured group had a usual place of care; 34% of the expansion group but 64% of the uninsured group needed to see a doctor but did not; and 74% of the expansion group and only 52% of the uninsured group had a Papanicolaou smear within the past year.

Problem areas remain. Wide variations exist between MCOs. Although average data show improvements in many preventive functions, some MCOs continue to report levels of care below those achieved with Medicaid.[18] Major variations in outcomes have been reported between MCOs in, eg, neonatal death rates; Cooper et al[35] identified one MCO in which infants were 2.8 times as likely to die in the first 60 days after birth than those enrolled in the largest MCO.

Also, TennCare Partners may have reduced the quality of care for the mentally ill. A study of patients who had been followed up in one community mental health clinic that was closed as a result of implementation of TennCare Partners demonstrated that more than one third were not referred to another program and that 20% were receiving no behavioral healthcare.[36]

State and Federal Expenditures

The ability of TennCare to limit the growth of state and federal expenditures for healthcare is the most important test of the program and was the major driving force for its implementation. TennCare's original financial projections included a total 5-year (1994-1998) budget of $19.6 billion, of which $8 billion (40.8%) would come from the state and $11.6 billion (59.2%) would come from the federal government.[5]

Cost containment at the state and federal levels was to be achieved primarily by establishing a global state healthcare budget and fixed capitation rates for MCOs. The global budget was initially set at the then-current Medicaid budget, which was deemed sufficient to support an expanded population in a healthcare system functioning under managed care principles. Capitation rates were then determined administratively by, in essence, dividing the previous Medicaid budget by the number of anticipated enrollees. This rate was then discounted by 20.4% to consider ongoing charity care; by 1.7% for local government contributions to healthcare; and by 3.9% for TennCare-mandated cost sharing.[12] The initial average capitation payment was set at $101.59 per member per month (PMPM) stratified into 8 groups based on age and disability ($39.30 to $245.82 PMPM).

Increases in capitation payments ranged from 0% in FY1995 to 9.7% in FY1996. Actual current rates average $135.75, with a range of $54.84 for enrollees aged 1 to 13 years to $309.26 for the blind and disabled. A substantial further increase to $173 PMPM was implemented in 2001.

These capitation rates have been supplemented by substantial direct payments to health plans and providers. Payments to MCOs were made to cover shortfalls. Payments to hospitals included monies for graduate medical education, uncompensated care, and indigent care and totaled $485 million ($60 million to $108 million per year) during the initial 5-year demonstration period. An additional $9.9 million to $18.2 million per year (total of $57.9 million) was paid to providers to promote primary care, assist in malpractice coverage costs, and support community mental health centers.[37]

Overall, TennCare costs increased from $2.64 billion in FY1993-1994 to $3.7 billion in FY1998-1999, corresponding to an average rate of growth of 6.2% per year (**Table 2**). Total expenditures for the 5-year demonstration period equaled $16.48 billion, including $4.99 billion in state, $11.24 billion in federal, and $250 million in other funds. Overall expenditures for TennCare Partners rose from $308.8 million to $419.57 million in FY1998-1999, corresponding to an average annual rate of growth of 7%.

The success of the state in reducing state expenditures depends on the cost level used as a benchmark. First, the growth rate in TennCare costs can be compared with the rate of growth in the state's economic base; one objective of TennCare was to limit cost increases to the rate of growth of the state's economy. Second, TennCare growth can be compared with actual national Medicaid growth rates for each year of the demonstration project[38]; this comparison is, in essence, between the changes introduced by TennCare and the average change introduced by other states. Finally, TennCare growth can be compared with the rate of growth of

Tennessee Medicaid projected by the state at the start of TennCare (ie, approximately 18% per year). This would be akin to comparing TennCare with the status quo, ie, continuing the program as it was without systemic changes.

As shown in **Table 3**, the 5-year savings include an impressive $2.3 billion for comparisons to overall Medicaid growth rates and a more modest but substantial $847 million savings for comparisons to gross state product. Compared with growth of Medicaid projected at the start of TennCare, TennCare generated savings of $9.68 billion during the 5-year period. However, this last comparison is limited by the fact that Medicaid rates of growth declined significantly after 1994,[38] but it was this high rate of growth that the state confronted when planning for TennCare and when projecting its initial financial costs and savings.

Impacts on the Healthcare Delivery System

TennCare also affected many necessary and important components of the healthcare delivery system that serve the general public as well as the TennCare and remaining uninsured populations. These impacts are not explicitly addressed by the state's objectives and assessment criteria but are critical to assessing the successes and deficiencies of this program.

Service Delivery Reform

TennCare dramatically and rapidly increased the market penetration of managed care. Before TennCare, only 5.7% of the state's population was enrolled in a health maintenance organization, and an additional 1 million individuals participated in preferred provider organizations. Within a period of less than 3 years, more than 50% of the state's population was enrolled in some form of managed care. The buying power of the large Medicaid group reduced healthcare costs; it was this power that enticed the 12 original MCOs to join TennCare and the providers to accept the perceived low payment rates for their services.[10,39] Savings in expenditures for Medicaid eligibles were then recycled to provide coverage to non-Medicaid–eligible TennCare enrollees.

Solvency of MCOs

The number of MCOs functioning within TennCare has declined. Although 20 MCOs initially expressed an interest in joining TennCare, only 12 were eventually approved by the state. Of these 12 MCOs, only 8 remain in the program, 3 of the original 12 having merged into other larger and healthier MCOs and a fourth having withdrawn from the TennCare market.

The financial status of the MCOs has been declining since the onset of TennCare—a secular trend common to other Medicaid managed care markets.[40] Between 1994 and 1996, MCOs reported operating margins ranging from a loss of 8.83% to a profit of 7.59%, with an average profit of 0.62%.[31] In 1997, however, margins ranged from a loss of 22.43% to a profit of 7.02%, with a mean operating loss of 1.0%. A year later, the mean operating loss increased to 1.9%.[41] As of December 1999, 6 of the 8 operating MCOs incurred cumulative losses totaling $67.3 million. These losses took their toll; 3 of the MCOs reported a negative net worth. Other smaller MCOs had a small positive net worth only after supplemental payments in 1997 and 1998.[37]

Table 2. TennCare Expenditures Compared With 3 Benchmarks, 1994-1998*

	Fiscal Year						Compound Annual Growth Rate
	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999†	1994-1998, %
Actual expenditures	2644	3120	3191	3405	3592	3696	6.2
Growth at US Medicaid rate	3143	3444	3685	3865	4058	4329	7.0
Growth at state gross product rate	3007	3213	3362	3532	3746	3937	5.9
Growth at pre-TennCare rate	3385	3966	4663	5498	6500	7670	18.1

*All values are given in billions of dollars except where indicated otherwise.
†Estimated.

The financial situation of the third largest MCO was so precarious that the state took over its operation and put it into receivership; 137,697 enrollees were affected. The second largest MCO was placed under involuntary supervision in May 2000 because it was unable to process claims properly, pay providers, and provide adequate access to care; it has 330,231 enrollees.

In addition, the largest MCO—with an enrollment of more than 600,000 members, or almost half of the total TennCare population—notified the state of its intent to withdraw from the TennCare market in June 2000 because of projected losses. It has remained in the program but only under an exigency clause in its contract with a no-risk relation with the state. Other MCOs have indicated that if Blue Cross/Blue Shield pulls out they will be unable to handle the patient volume and may also be forced to withdraw. Thus, the viability of the delivery systems of more than 80% of all TennCare enrollees is in serious question.

Financial Impacts on Hospitals and Providers

Tennessee hospitals have reported reimbursement rates from MCOs in 1997 of 61% of their costs. Rates were lowest for rural hospitals (54%) and highest for safety net hospitals (71%). If these rates are adjusted upward to consider extra payments to hospitals and downward to adjust for possible overestimation of costs, the mean realized reimbursement rate was only 72% of costs.[37] TennCare MCO mean per diem payment rates to hospitals are substantially lower than commercial or Medicare rates and lower than pre-TennCare Medicaid rates; eg, the TennCare mean rate for all general hospitals in 1998 was less than half of the Medicare and commercial rates.

One finance objective of TennCare that was hailed by providers was to reduce the charity care burden of providers. Data[37] from 1993 to 1997 indicate that charity care and bad debts for all general hospitals decreased from $369.7 million in 1993 (before TennCare) to $177.2 million in 1995 but rose again to $354.2 million in 1997. Thus, the overall impact of TennCare was transient; charity care for safety net hospitals in 1997 was actually higher than before TennCare began ($117.3 million vs $121.5 million).

Payment rates to physicians and other providers are likewise below expected levels.[37] Billings by physicians for TennCare patients equaled 11.5% of all billings, but the collection rate was only 33.8%. Some providers with low TennCare volumes reported not billing MCOs because of low anticipated returns. Provider satisfaction was low in the beginning and has remained low. In a 1997 survey[42] of more than 300 internists in Tennessee, only 13% of 306 respondents gave TennCare an overall rating of excellent or good, whereas 43% rated the program as fair and 42% as poor. Targets of discontent in this and other surveys[43] included, in addition to lower fees, the required paperwork and telephone work and reduced access to specialty care. Almost 50% of physicians believed that quality of care had declined since TennCare was enacted.[42] A recent survey conducted by the Tennessee Medical Association documented that nearly one third of the state's physicians planned to terminate TennCare contracts during the upcoming year.[44]

Security of the Safety Net

The impacts of TennCare on facilities and providers forming the safety net have been especially significant. As discussed in the recent Institute of Medicine report,[45] Medicaid managed care programs can threaten safety net providers in several ways, including reduced payments for services, reduced governmental subsidies, and diversion of patients from public to private facilities. All have occurred in Tennessee. Differences in per diem payments to safety net hospitals are greater than for other hospitals; average Medicare and commercial rates were $2941 and $2426, respectively, whereas TennCare MCOs paid an average of $971.[37] The high proportion of TennCare enrollees or uninsured patients remaining in these facilities has blocked their ability to cost shift. In addition, the virtual elimination of disproportionate share funding removed what had been a lifeline for many small rural and large public hospitals. And as noted in the previous paragraphs, the amount of charity care provided by public hospitals has actually increased since the introduction of

Table 3. TennCare Savings or Losses in Relation to 3 Benchmarks, 1994-1998*

Benchmark	TennCare Savings (Losses), 1994-1998
Growth at US Medicaid rate	2300
Growth at state economy rate	847
Growth at pre-TennCare rate	9676

*All values are given in billions of dollars.

TennCare, whereas the direct and supplemental payments to safety net providers were substantially lower. Similar problems face other safety net providers, including neighborhood clinics, community mental health clinics, and practitioners caring for a disproportionately large share of TennCare recipients.

Academic Health Centers

The teaching and research missions as well as the fiscal health of the state's academic health centers have also been impacted by TennCare.[46-48] The original TennCare plan called for elimination of almost $48 million in direct graduate medical education support to the state's academic medical centers. This potentially disastrous outcome was averted and converted to a partial gain for academic programs.[47] The state agreed to provide approximately $48 million in graduate medical education funding to be distributed directly to the state's 4 medical schools, permitting support of residents wherever they trained. The medical schools in turn agreed to increase the aggregate percentage of primary care residency positions to 50%.

Declining demands for services in academic centers was the result of the general effect of managed care to reduce inpatient services and the high proportion of Medicaid patients in many of the state's teaching hospitals. With TennCare, these patients had a choice of care sites, based on the MCO in which they enrolled, and many migrated away from traditional public teaching facilities.[46] In an effort to ensure adequate patient volumes and revenue to maintain clinical programs, 3 academic centers (University of Tennessee, Memphis; University of Tennessee, Knoxville; and Vanderbilt University, Nashville) formed MCOs.

These academic MCOs, however, became the subject of adverse selection, enrolling a disproportionate share of sicker patients with more complex conditions that required more expensive care than did other MCOs.[48] The academic MCOs enrolled 4.5% of all patients but 38% of those with AIDS and 26% of those undergoing organ transplantation. Although TennCare provides additional payments for enrollees with 6 high-cost conditions (AIDS, coagulation defects, cystic fibrosis, pregnancy, premature birth, and transplantation), the adequacy of these payments for these conditions is not known, and no payments are provided for other high-cost conditions such as quadriplegia, regional enteritis, and respiratory failure. The MCO operated by the University of Tennessee, Knoxville, was subsumed by Blue Cross/Blue Shield in 1996 after experiencing significant financial losses. The financial impacts on the academic centers have been blamed for large numbers of students leaving the state after graduation[49] and for a rapid rise in the number of faculty resignations.

··· DISCUSSION ···

This review depicts the complex and turbulent history of TennCare. Its birth was out of necessity, but its infancy was met with challenges from virtually every stakeholder. The program survived, with many adjustments in the plan's operational details, to achieve notable successes in expanding access to and quality of care. These successes notwithstanding, however, the program faces a very insecure future.

A comprehensive assessment of TennCare or other Medicaid managed care programs is a difficult task.[13] There is little baseline data and no obvious control group against which to compare the outcomes; the frequent programmatic changes make choosing a time point for analysis arbitrary; the concomitant changes in the other sectors of the healthcare industry make attributing results to any one component difficult; and the effects of time on the maturation of healthcare systems[11] makes separation of transitional from long-term effects (which may be in opposite directions) difficult.

This constraint notwithstanding, TennCare made substantial progress toward achieving its goals. Health insurance coverage has expanded, especially for the uninsurables (although the exact number of newly insured remains unclear); TennCare remains the only state Medicaid managed care reform plan to include this group regardless of income. It offers broader coverage with lower out-of-pocket costs than the state's former Medicaid program and many commercial plans; this breadth is common among Medicaid programs because of the different health needs of clientele and their general inability to purchase services not covered. TennCare also improved access to and quality of care, especially preventive and primary care, and patient satisfaction.

It is critical to note that detailed studies on these topics have yet to be reported for TennCare. Many reports have been internally commissioned, and some have been criticized as being selective and incomplete. The responsibility for documenting quality and access under Medicaid managed care is new to many states.[13,50] Such studies are particularly important for Medicaid managed care because of the greater health risks present in the Medicaid pop-

ulation engendered by age, poverty, and disability; the more complex problems in receiving care because of transportation and communication problems[51]; the high turnover rate in eligibility that constrains the advantages of continuity of care[52]; and the inability of recipients to purchase services not covered by the plans. The need for such oversight in TennCare is demonstrated by such factors as the variability in the appropriate use of neonatal intensive care units among the TennCare MCOs, as reported by Cooper et al.[35]

Finally, TennCare seems to have reduced healthcare costs to the state and federal governments. Overall 5-year cumulative costs to the state are lower in relation to actual national increases in Medicaid expenditures during the study period (Table 3). However, these estimates are subject to many assumptions and methodological differences. For example, others have concluded that TennCare cost all parties $3.8 billion more than the previous Medicaid plan would have cost.[12]

It thus seems that TennCare up to this point has been able to accomplish, at least in part, its seemingly contradictory goals—to expand health insurance coverage and to improve quality of care while reducing overall costs to the state and federal governments.

But it is TennCare's financial structure that has largely obscured these accomplishments and that now threatens to topple the program. As operating margins of MCOs have declined into negative numbers, several MCOs are reported to be near fiscal collapse. The largest MCOs have threatened to withdraw or have been placed under state operation because of financial and administrative problems.

In our view, this outcome is not unexpected. The reasons for this are both generic to managed care and specific to TennCare. The financial record of managed care has been depicted as one of initial savings followed by a return to rapid rises in growth rate.[53,54] Many mechanisms for reducing costs result in one-time savings. Once they have been implemented and the savings realized, other forces such as changes in population demographics (eg, aging) and the development and dissemination of new technologies operate to drive costs up.

Other reasons more specific to TennCare include low capitation rates; expansion of the number of insured; the broad range of services covered; administrative issues and fraud; limited managed care experience; and poor public relations. The main mechanism whereby TennCare reduced state expenditures was that of global budgeting. By capping state expenditures at a predetermined level it, in essence, ensures savings. The reduced expenditures led, pari passu, to lower capitation payments for enrollees entitled to coverage.

But these low capitation rates placed substantial stress on the delivery system. The adequacy of the capitation rates has been a contentious issue from the outset. Rates were set administratively without assessing market conditions by competitive bidding or price negotiation. Plans and providers have persistently argued that payments are inadequate, below costs, well below those offered by other health systems, and substantially below pre-TennCare Medicaid rates. Studies have attempted to determine the adequacy of the capitation rates by 2 approaches. TennCare's capitation rates are lower than those of other states when similar (although not identical) benefit packages are compared[37,55]; in 1998, TennCare-adjusted capitation rates were among the 5 lowest in the nation and averaged only 79% of the national mean.[55]

An actuarial assessment of capitation rates in 1999[37] determined that TennCare rates are approximately $11 PMPM lower than the amount considered actuarially sound. It is these lower payments that now challenge the solvency of the plans and hospitals and the willingness or ability of plans, hospitals, and clinicians to continue to participate in the program. An updated actuarial analysis[56] has recommended an increase in the average TennCare capitation rate for 2001 to $173.29 PMPM (with a range of $128.49 PMPM for Medicaid eligibles to $374.68 PMPM for the disabled). These figures are based on funding professional services at a rate of 85% of prevailing Medicaid rates and supporting inpatient care at a rate that is a blend of commercial and Medicaid payment levels.

A second reason for fiscal instability is the high cost of the large expansion population, especially those who were previously uninsurable. The size of this pool is indicated by (1) the statistic that Tennessee has 150.68 TennCare enrollees per 100 poor, whereas the national average is 86.58 per 100 poor, and (2) the observation that the number of uninsurable individuals enrolled in TennCare exceeds the number included in Medicaid programs of the 27 other states with high-risk pools combined.[57] Between 1994 and 1998, the number of uninsurable individuals enrolled in TennCare grew 370%.

The dramatic rise in the number of uninsurables in TennCare adds significantly to the costs to MCOs. Although inclusion of non-Medicaid eligibles may have been a political necessity,[10] it significantly

increased program costs. The healthcare costs of this group are substantially higher than the average; the most recent Price Waterhouse Coopers[56] estimate of monthly costs for the uninsurable group is $324.64 PMPM compared with $173.29 PMPM for the Medicaid-eligible group.

The lumping of all of these groups into one plan has consequences in addition to raising direct costs. First, as part of the same program, all pay the same copayments and deductibles, whereas in most states, the uninsurables pay higher premiums of 25% to 50% of the cost of a standard commercial package.[57] Second, because of the very broad range of healthcare needs included in the single plan, calculation of a single set of capitation rates is more difficult.[49]

The breadth of covered services also raises costs. For example, pharmaceuticals consume more than 20% of the TennCare budget but are not covered in many private policies.[56] This cost is aggravated by the observation that the use of prescription drugs in Tennessee is higher than in any other state.[49] Furthermore, because all enrollees are included in one plan, Medicaid requirements are applied to all regardless of need. It has been claimed, eg, that this has led to "overinsurance" for many, ie, insurance covers services that could readily be paid for out of pocket.[56]

Also, TennCare abolished disproportionate share payments but did not reduce uncompensated care and left many Tennesseans without insurance coverage. Thus, many hospitals, especially those in rural areas, had to bear many of the financial burdens they faced before TennCare but without a specialized or targeted source of payments.

Administrative failures compounded these problems. The state does not have systems to verify eligibility, including eligibility as an uninsurable. Recent audits demonstrated that the state paid more than $6 million for care for 14,000 deceased enrollees and additional expenditures and other ineligible cohorts. A review of 98,000 enrollees resulted in the disqualification of 16,500 (17%). Some plans, in addition to suffering from systemic issues, have fallen prey to internal mismanagement and fraud. For example, one for-profit plan with an enrollment of 160,000 was placed into receivership after it was uncovered that it had paid $11.8 million to its parent company and paid its CEO $800,000 per year while its doctors and hospitals were owed $60 million in unpaid claims.

An additional set of issues relates to the limited previous experience of the state and providers with managed care.[11] Before TennCare, managed care penetration into Tennessee was among the lowest in the nation—in both public and private markets. The state's clinical and administrative systems were ill prepared to manage a large influx of clients quickly. Delivery systems promoting integration, efficiency, and true management of care were immature; physician attitudes and practice tools were not aligned with managed care concepts and requirements; most MCOs had no provider networks and most were newly formed specifically for TennCare; and state departments were not prepared to take on new tasks such as contract management, MCO oversight, quality assessment, patient complaints, etc. More important, integrated healthcare delivery systems needed to optimize efficiency in managed care markets have not evolved so that TennCare has remained, to a substantial extent, a "managed finance" program superimposed on a traditional delivery system.

Finally, TennCare has not recovered from the very poor public image painted during the start-up phase. It has not overcome the public's perception of the program as a mismanaged system that provides poor care. The adversarial relation between the program and stakeholders that emerged almost immediately has persisted with a lack of trust and confidence in the program's leadership. These issues continue to make the public, legislators, and providers skeptical about any proposed changes.

These issues could be tolerated for a limited period, and some MCOs managed to initially profit. However, as the challenges persisted or expanded, the ability of MCOs and providers to cope was exceeded, and even those with early profits are experiencing or predicting significant losses. Low payments to providers coupled with high costs and limited programmatic advances led to accumulating debt that has now led to evolving and impending fiscal and structural collapse.

··· CONCLUSIONS ···

Tennessee's experience has demonstrated that conventional managed care is not the "magic bullet" for reducing costs while maintaining or enhancing quality of Medicaid services. All 3 objectives—enhancing access, improving quality, and reducing costs—may be accomplished but at a significant and unsustainable cost to the underlying delivery system (managed care plans, hospitals, clinicians, and, ultimately, patients). These effects may be tolerated for

a limited period, but the challenges accumulate as costs increase.

The challenge to policy makers is to repair the financial issues while maintaining the gains in clinical services. Proposals currently include significantly increasing capitation rates, with built-in risk banding and stop-loss systems to reduce MCO and provider financial risk; applying geographically adjusted payments that incorporate regional differences in healthcare service use; attracting more MCOs operating on a regional basis, with mandated enrollment minimums and maximums to ensure adequate risk pooling while limiting the ability of any one plan to dominate the political as well as the patient market; separating Medicaid-eligible and other enrollees into separate plans with different coverage and delivery systems; increasing premiums and copayments for those not in poverty and modestly reducing the services covered; increasing oversight and introducing recertification procedures to reduce fraud and abuse; and relying on other federal programs such as the State Children's Health Insurance Program and the Health Insurance Portability and Accountability Act to cover children and displaced workers.

Whether such changes in the infrastructure will successfully offer stability to the program is, of course, only speculative. Several factors are important. Major continued infusions of additional funds into TennCare—an act that would be welcomed by providers but unlikely in a state already with an operating deficit—would provide only short-term relief until unresolved systemic issues and inescapable increases in healthcare costs force another fiscal crisis. Instead, increases in payments should be used as only one part of an overall strategic approach that promotes desired behaviors and end points and that manages problems such as adverse selection and explicitly supports safety net providers.

Just as changes in the finance system are important, changes in delivery systems and models are critical if the clinical and financial advantages of managed care are to be realized. As recently summarized by Stuart and Weinrich,[58] "there is no reason to expect, and every reason to doubt, that changes in healthcare financing alone for Medicaid will result in major improvements in health status or cost savings for states." Instead, major changes in the fundamentals of healthcare delivery—as well as finance—models, beyond the role of the gatekeeper and basic capitation payment systems, will be required to maximally promote health while restraining costs. These include true integration of services through novel delivery models; promotion of cost-effective and appropriate care based on evidence; appropriate allocation of risk based on areas of responsibility; and, ultimately, providing universal coverage to all to avoid the organizational and financial dilemmas caused by providing care for the uninsured but, most important, to maximize the impact of our healthcare systems on the health of all our citizens.

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