



## Evaluating the Impact of Managed Care on Service Use and Disparities in Care Among Children and Adolescents Receiving Medicaid

by Todd Eberly

### About the Author

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### Issue

Managed care has become the principal mechanism for financing and delivering care in Medicaid, with nearly 62 percent of Medicaid recipients participating in managed care in 2004 (CMS 2006). States have adopted managed care in Medicaid in an effort to control program costs, as well as to enhance enrollee access to providers, encourage regular and timely use of preventive care, and improve coordination of specialty care.

The potential role of managed care in enhancing access to care must be considered within the broader framework of the racially and ethnically diverse population served by the Medicaid program, and the historic disparities in access for racial and ethnic minorities. Medicaid plays a disproportionate role for racial and ethnic minorities, covering 18 percent of white children, but 45 percent of black, and 40 percent of Hispanic children.<sup>i</sup> The increased use of managed care in Medicaid raises the question as to whether such delivery systems will have differential positive or negative effects on racial and ethnic minorities.

Under fee-for-service (FFS) payment systems, the primary alternative to managed care, plan beneficiaries independently identify and seek care from Medicaid providers, limiting state influence over care-seeking behavior and control over the number and type of services provided. Managed care plans are structured around the delivery of effective primary care, as prevention and early intervention are expected to be less expensive than emergency or acute care (Long et al. 2004). By providing networks of participating physicians, managed care organizations facilitate access (Mittler and Gold 2005). Additionally, by contracting with managed care organizations, states have the ability to direct patient care practices, setting expectations for access and quality (Oliver 1998). Concerns remain, however, that with lower levels of socioeconomic status, English language fluency, and health literacy, minority recipients may have difficulty navigating managed care structures such as “restricted provider networks, utilization review, specialist referrals, and other managed care cost containment mechanisms” (Weech-Maldonado et al. 1998).

Managed care may, however, improve access to care by linking enrollees to primary care physicians responsible for care coordination. In addition, plans may be required to provide specific enabling services, such as translation, which are directed at meeting the unique needs of ethnic minorities. Overall, if plans are held accountable for specific quality or access standards, they are likely to tackle necessary provider and systems barriers faced by minorities. This study found that the transition to managed care resulted in significant increases in the receipt of preventive services by children and adolescents in Maryland Medicaid. The study also determined that black and Hispanic youths experienced differentially positive improvements relative to their white peers.

### Background

Maryland’s Medicaid program transitioned to a managed care delivery system in response to growing program enrollment and cost escalation. A voluntary Medicaid managed care option was available between 1988 and 1995, and Maryland implemented mandatory managed care in July 1998 (Oliver 1998). Participating managed care organizations are paid a

capitated rate per enrollee based on the nationally recognized Adjusted Clinical Group (ACG) risk adjustment methodology (Weiner 1998). Individuals dually eligible for Medicare and Medicaid and the long term institutionalized were excluded from the program (Maryland Department of Health and Mental Hygiene 2006), but nearly 80 percent of all recipients are eligible (Chang et al. 2003). As of December

<sup>i</sup> U.S. Census Bureau. Table HI08. Health Insurance Coverage Status and Type of Coverage by Selected Characteristics for Children Under 18: 2004. [http://pubdb3.census.gov/macro/032005/health/h08\\_000.htm](http://pubdb3.census.gov/macro/032005/health/h08_000.htm)

2004, seven managed care organizations participated in the Maryland Medicaid managed care program, delivering care to over 600,000 state residents. The vast majority of recipients are children.

There is extensive literature examining the effects of managed care on access to care for children, as summarized in multiple reviews (Hurley et al. 1993; Rowland et al. 1995), but very few studies explicitly address the question of differential effects on minorities. Hargraves, Cunningham and Hughes (2001) used data from the 1996-1997 Community Tracking Survey to examine the effect of enrollment in managed care on access to primary care. They found that enrollment in managed care did not eliminate disparities in service use, but was associated with improved access to care relative to non-managed care plans.

## The Study

This study examined whether a transition from FFS to a managed care Medicaid program improved access to preventive well care services, and whether there were differential effects on service use for racial and ethnic minority youths. Maryland's program provides a useful case study, as the state requires plans to implement a variety of features designed to enhance access for new enrollees. The claims, encounter, and enrollment data available through reporting systems used by the state also provide a unique resource to address this critical issue.

## Methods

This analysis pooled multiple years of claims and encounter data from the Maryland Medicaid program to examine baseline disparities in use of preventive care, and to assess the effect of the transition on the direction and magnitude of any disparities. The indicators of preventive care use were based on established Health Plan Employer Data and Information Set (HEDIS) measures for child and adolescent well care services (NCQA 2005). Table 1 details the dependent variables, the affected populations, and the International Classification of Diseases, Ninth Revision, Current Procedural Terminology, and HCFA Uniform Bill-92, Version 4.1 codes used to identify the procedures as listed in an individual's medical records file. The period of study includes 1997 (the year preceding the implementation of managed care), 2001 (reflecting a relatively new but stable managed care program), and 2004 (reflecting a mature managed care program). For the sake of brevity, findings from 2001 are not presented here.

Bivariate analyses establish patterns of preventive care use across the racial and ethnic groups of interest, as well as trends over time. Regression-based decomposition (Oaxaca 1973, Hargraves and Hadley 2003) was then used to estimate how much of any change could be linked to changes in population or program characteristics unrelated to managed

**TABLE 1: Well Care Preventive Service Measures**

Access Measure (Dependent Variables)	Service Identification Code(s)	Population
Well child visits in the third through sixth year of life	CPT Code: 99382, 99383, 99392, 99393 ICD-9 Code: V20.2, V70.3, V70.5, V70.6, V70.8, V70.9	Children aged 3–6 as of December 31 of the measurement year
Adolescent well care visits in the twelfth through twenty-first year of life	CPT Code: 99393, 99394, 99395 ICD-9 Code V20.2, V70.0, V70.3, V70.5, V70.6, V70.8, V70.9	Adolescents aged 12–21 as of December 31 of the measurement year

care. Separate multivariate regression analyses were performed for each measure under FFS in 1997 and managed care in 2004. Controls were introduced for child, family, area, and program characteristics that could have independent effects on the outcomes of interest, but were independent of managed care. The population means from 1997 were multiplied by the regression coefficients generated for 2004. This method estimated the proportion of the changes in service use that can be attributed to the introduction of managed care. This approach allows for a simulation where the Medicaid managed care program has the same mean characteristics as the FFS program. Only the unobservable behavioral responses (as represented by the regression coefficients) were changed—the impact of these changes may proxy a managed care effect.

## Findings

As shown in Figure 1, there were significant increases in the receipt of preventive services under managed care relative to FFS. Overall, there was a 13.8 percentage point increase in the proportion of children receiving any well care service under managed care. The increase for adolescents was 12 percentage points. Black, white, and Hispanic children and adolescents all experienced increased service receipt as well. White children saw an increase of 9.6 percentage points under managed care, while black children posted an increase of 15.3 percentage points, and Hispanic children had an increase of 20.9 percentage points. White adolescents saw their service receipt increase by 7.3 percentage points, compared with an increase of 13.8 percentage points for black adolescents, and 18.9 percentage points for Hispanic adolescents. All increases were statistically significant, as were the differences between racial and ethnic groups.

The differences in receipt of preventive well child care across race and ethnic groups may reflect differences in other child, family, and/or program characteristics across groups. In addition, there were changes in public insurance eligibility policies during the study period that may have affected

*(continued on reverse)*

characteristics of Medicaid enrolled children, and may have had differential effects on selected groups. In 1998 Maryland implemented the State Children’s Health Insurance Program (SCHIP) as an expansion to its Medicaid program, enrolling children with family incomes up to 200 percent of the federal poverty level (Chang et al. 2003). The introduction of higher income, presumably healthier children, may complicate simple bivariate comparisons between periods. Additionally, an examination of population characteristics revealed significant demographic differences between black, white and Hispanic youths in Maryland Medicaid. Black and Hispanic youths tended to come from lower income families, and families without an employed parent, as compared with their white peers. Black youths were more likely to reside in an urban setting, and Hispanic youths were predominantly located in the suburbs. White youths were evenly divided between rural and suburban areas. Black and Hispanic youths were also found to live in areas with higher ratios of Medicaid recipients to participating physicians—possibly limiting timely access to care.

An appropriate examination of the impact of managed care requires the introduction of controls for changes that occurred between 1997 and 2004 that were unrelated to the implementation of managed care. The introduction of older and presumably healthy youths was unrelated to managed care. Additionally, policy changes that resulted in increased enrollment periods for beneficiaries could have been implemented under FFS or managed care and could not be considered a benefit of managed care. Regression-based decomposition allows for an estimation of the effect of managed care by holding constant the population and programmatic characteristics present under FFS while introducing the coefficients or behavioral responses present under managed care.

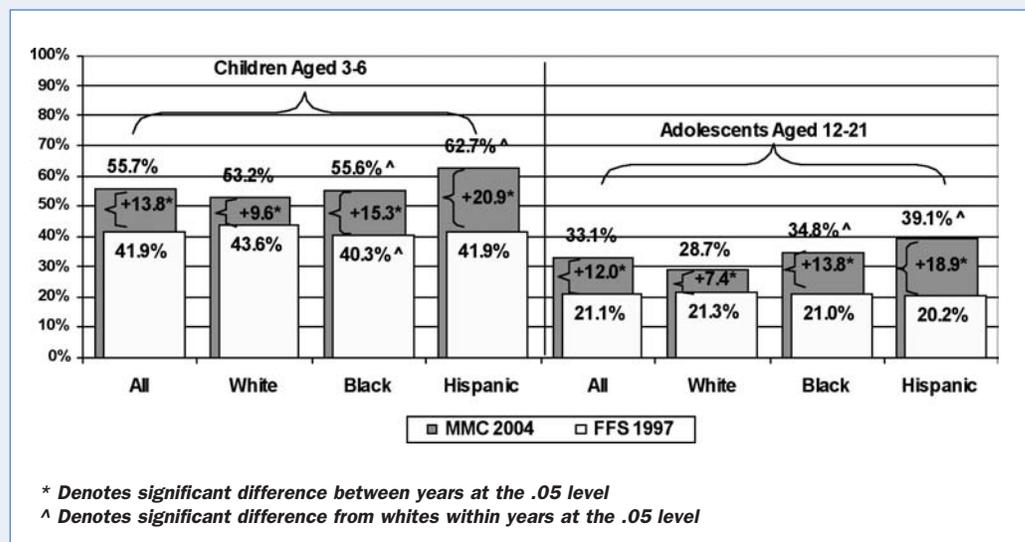
## Estimating a Managed Care Effect

As shown in Figure 2, the introduction of population and programmatic controls significantly reduces the increases observed under managed care in the bivariate analysis. Of the 13.8 percentage point increase observed among children, all but 3.8 percentage points was attributable to population and programmatic changes unrelated to the transition to managed care. White children experienced a significant 2.6 percentage point increase in service use under managed care (down from 9.6 in the unadjusted findings). Black children realized a 3.8 percentage point increase, and Hispanic children an 8.6 percentage point increase—a number considerably lower than the 20.9 percentage points observed in the unadjusted measure, but still impressive. Overall, the adjusted findings suggest that managed care had a significant, though not necessarily dramatic effect on service receipt. Slight differences between black and white children, observed in the FFS program, were reduced under managed care. The gains experienced by Hispanic children under managed care resulted in service receipt rates that were higher than their peers, a reversal from the FFS findings.

Among adolescents, the unadjusted 12 percentage point gain was halved to 6.2 percentage points after introducing controls for changes in population and programmatic characteristics unrelated to managed care. Of the unadjusted 7.3 percentage point gain observed for white adolescents, there was a gain of 3 percentage points with adjustments. The 13.8 percentage point increase among black adolescents was reduced nearly by half to an increase of 7.6 percentage points, and the 18.9 percentage point increase noted for Hispanic adolescents was reduced to 6.1 percentage points. Although the gains observed in the multivariate analysis were not as dramatic as those reported in the bivariate they remained significant—indicating

**FIGURE 1**

Mean Service Receipt Rates and Observed Increases for Youths in Maryland Medicaid under FFS and Managed Care



an increase in service use under managed care. Among children and adolescents, the multivariate examination revealed that black and Hispanic youths experienced greater gains in service use under managed care than did their white peers.

## Conclusion

The transition to managed care in Maryland Medicaid resulted in significant, though not necessarily dramatic, increases in service use among children aged 3 through 6. Adolescents between the ages of 12 and 21 experienced somewhat larger increases under managed care. Although simple bivariate analyses suggested dramatic improvements under managed care, the introduction of controls for population and programmatic changes between the periods under study showed that much of the observed improvements were unrelated to managed care. That said, the increases in service receipt observed in the bivariate analyses that were possibly attributable to managed care ranged from 25 to 52 percent.

Levels of service use among youth Medicaid recipients in Maryland managed care were consistent with those found in studies in other states (Sawaya 2001, Byrd et al. 1999) and were above FFS levels. Consistency and relative improvement notwithstanding, greater than half of all adolescents were found to have received no well care visits under managed care. Slightly more than 40 percent of children age 3 to 6 received no well child services.

Although the rates of service use were higher under managed care than under FFS, the American Academy of Pediatrics recommends that children and adolescents in the age groups included in this study receive a well care preventive service each year. If a key feature of managed care is the promotion of care management via access to preventive care, then this

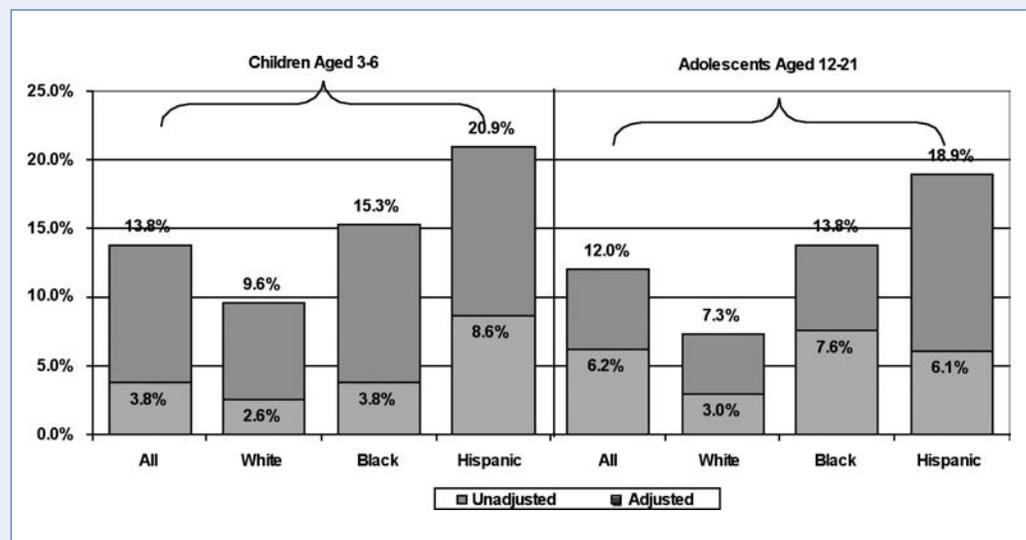
research shows that there remains room for improvement. The use of preventive services can promote healthier behaviors and reduce the likelihood or frequency of the onset of negative health conditions (Prentice 2006, Cohen, Davis and Mikkelsen 2000). Thus, problems accessing preventive care may serve as a proxy for problems with health care access in general (Zuvekas and Taliaferro 2003).

There were apparent differential managed care effects by race/ethnicity and age. In both the bivariate and multivariate analyses, black and Hispanic youths experienced increases in service receipt that were higher than their white peers. The explanation for this differential impact is unclear. One recent study determined that white patients are much more likely than racial and ethnic minority patients to prefer receiving initial care from a specialist rather than a primary care provider (Wong et al. 2004). This is contrary to the managed care model and could suppress care seeking by whites under such a care delivery system. Additionally, racial and ethnic minorities are less likely than their white peers to have a usual source of care or a primary care physician—factors which have been found to suppress the receipt of timely and appropriate care (Shi 1999). Managed care may improve access to care for such populations by linking them to physicians responsible for care coordination. A better understanding of the differential effects observed in this study merits further research.

Beyond just the questions raised concerning access to preventive services, a next step in this analysis would be an examination of whether managed care has served the full array of health service needs of children and adolescents in Medicaid, such as access to specialty care.

**FIGURE 2**

Share of Observed Change in Service Receipt Possibly Attributable to Managed Care



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