
Access, Use, and Costs

The Impact of Managed Care on Children's Access, Satisfaction, Use, and Quality of Care

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Objective. To examine the impact of managed care on children's access, satisfaction, use, and quality of care using nationally representative household survey data.

Data Source. The 1996 Medical Expenditure Panel Survey (MEPS).

Study Design. Bivariate and multivariate analyses are used to detect independent effects of managed care on access, satisfaction, utilization, and quality of pediatric health services.

Data Collection/Extraction Methods. Data were obtained from rounds 1, 2, and 3 of the 1996 MEPS. MEPS collects data on health care use, insurance, access, and satisfaction, along with basic demographic and health status information for a representative sample of the U. S. civilian, noninstitutionalized population. Our sample consists of 5,995 children between the ages of 0 and 17.

Findings. Among the 18 outcome indicators examined, the bivariate analysis revealed only three statistically significant differences between children enrolled in managed care and children in traditional health plans: children enrolled in managed care were more likely to receive physician services, more likely to have access to office-based care during evening or weekend hours, and less likely to report being very satisfied with overall quality of care. However, after controlling for confounding factors, none of these differences remained statistically significant.

Conclusions. Our findings suggest that there are no statistically significant differences in self-reported outcomes for children enrolled in managed care and traditional health plans. This conclusion is provisional, however, because of limitations in the data set.

Key Words. Managed care, access to care, utilization, children's health

The term "managed care" refers to a variety of health care financing and delivery arrangements. The common characteristic of these various arrangements is that managed care plan members are encouraged or required to obtain care through a network of participating providers, usually under contract with the

managed care organization. Miller and Luft (1994b) defined three types of managed care plans: health maintenance organizations (HMOs), preferred provider organizations (PPOs), and point-of-service (POS) plans. These three entities differ in the organization of their provider networks and how they pay physicians and other providers. However, in the current, rapidly changing health care environment, categorical boundaries are blurring. Today, controversies exist concerning how to classify health plans. Consequently, no entirely consistent taxonomy of managed care exists (Weiner and de Lissovoy 1993). Given difficulties in accurately categorizing plans, we define managed care inclusively here to encompass HMOs, PPOs, and POS plans.

Managed care has experienced explosive growth over the past decade (AAHP 1998). The expansion of managed care enrollment has both proponents and critics. Proponents argue that managed care offers a systematic method of controlling health care costs while providing enrollees a dedicated source of health care. In addition, managed care plans usually reduce patients' out-of-pocket payments for covered services when compared to traditional plans, especially indemnity plans. However, critics argue that the built-in financial incentives to control costs and utilization in some managed care plans, especially HMOs, can lead to restricted access to certain services and potentially compromise the quality of care provided. Also, special concerns are raised for vulnerable populations because primary care physicians who are at risk financially may face disincentives to refer their chronically ill patients to specialists (Hughes and Luft 1998; Simpson and Fraser 1999).

Although an extensive literature exists concerning the impact of managed care on the costs, utilization, and quality of care in the adult population (Miller and Luft 1997, 1994a; Dowd et al. 1991; Greenfield and Nelson 1992),

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the findings of those studies are not easily generalized to children because of their unique developmentally related health care needs. Moreover, many published studies of the impact of managed care on access, satisfaction, and utilization for children are now dated or cannot be generalized.

The Rand Health Insurance Experiment (HIE) study was the first randomized experiment to compare care in HMOs and traditional plans based on fee-for-service. In this experiment, a group of 1,693 adults and children were randomly assigned to receive their care from either a traditional fee-for-service health plan with either some or no copayments or from a staff-model HMO in the Seattle area. This study found children in the HMO group were less likely to be admitted to the hospital ($p < .05$) but slightly more likely to have an office visit than children in the plan with no copayments ($p < .1$). However, no significant differences in use of hospital- or office-based physician care were found between children enrolled in the HMO and the fee-for-service plan with copayments (Valdez, Ware, Manning, et al. 1989). The strength of the Rand HIE study is the experimental design, which eliminates the problem of self-selection. However, because this study was conducted more than 20 years ago in a single geographic area, the generalizability of the findings is limited.

During the early 1980s, a series of demonstration projects involving child Medicaid beneficiaries was conducted to examine the efficacy of HMOs for low-income children. The literature examining these demonstration projects has generated mixed findings. For example, while one study found increased physician visits among Medicaid children enrolled in HMOs compared to fee-for-service Medicaid plans (Laufenberg 1989), other studies have found reductions in physician visits among children enrolled in group- and staff-model HMOs (Hurley, Freund, and Paul 1993).

Freund and Lewit (1993) reviewed studies on the impact of publicly and privately sponsored managed care on children and pregnant women. They found no consistent evidence for a decrease in hospital use for children in HMOs and little evidence that the health outcomes or quality of care differed in HMOs and traditional plans. The only consistent findings, and these were limited to Medicaid children, are that HMOs were associated with reduced emergency room use and lower rates of referral to specialists. Several localized studies have examined service use by children with chronic and disabling conditions and found that these vulnerable children tend to experience greater difficulty obtaining specialty services in HMOs (Fox, Wicks, and Newacheck 1993; Karlson, Sumi, and Braucht 1990; Horwitz and Stein 1990). A recent comprehensive review of the literature on managed care

and children (Szilagyi 1998) found little evidence of a systematic difference between traditional plans and managed care plans across the domains of access and utilization.

Although growing and improving over time, the existing literature on managed care and children has several limitations. First, few studies have examined the experiences of nonpoor children under managed care. Most previous studies have focused on Medicaid-enrolled children. Second, most published studies are now dated, such that there is a paucity of current data to inform health policymakers. Third, most previous studies examined only a single domain of care, such as utilization. Few previous studies have examined multiple aspects of care, such as access, satisfaction, use, and quality of care.

Recently released population-based data from the 1996 Medical Expenditure Panel Survey (MEPS) provide a new opportunity to shed light on children's access, satisfaction, use, and quality of care under managed care and traditional health plans. This data set permits a comparison of the health plan experiences of a current, nationally representative sample of children, thereby addressing many of the limitations of previous studies. We use these data, which are the most recent and most detailed available, to systematically answer the following research question: How do access to care, use of services, satisfaction with care, and quality of care vary between children enrolled in managed care plans and those enrolled in traditional health plans? In addressing this question, we also provide a current profile of access, satisfaction, use, and quality of care for children in the United States.

METHODS

Data for these analyses were obtained from all three rounds of the Household Component (HC) of the 1996 MEPS, which was cosponsored by the Agency for Health Care Policy and Research (AHCPR; now the Agency for Healthcare Research and Quality, AHRQ) and the National Center for Health Statistics (NCHS) (Cohen 1997; Weinick, Zuvekas, and Drilea 1997; Weigers, Weinick, and Cohen 1998). The HC collects data at both the person and household levels and, when weighted, provides nationally representative estimates of health care access, satisfaction, utilization, quality, expenditures, sources of payment, and insurance coverage for the U. S. civilian, noninstitutionalized population. The sampling frame for MEPS was drawn from respondents to the 1995 National Health Interview Survey. Interviews were conducted in person with one adult member of each participating household using a computer-assisted personal interview (CAPI) methodology.

This report uses data collected during three separate rounds of interviews with the same respondents: round 1 data were collected from March to July 1996, round 2 from August to November 1996, and round 3 from February to May 1997. After taking into account survey attrition, the overall MEPS person-level response rate for deriving annual estimates in 1996 was 70.2 percent. A total of 5,995 children ages 0–17 were represented in all three rounds and are used in the analyses that follow.

Definition of Variables

Demographic and Health Variables. The demographic information used in our analysis was collected during round 1 of the survey. Demographic indicators include age, sex, race/ethnicity, family composition, highest parental education, parental employment, region of residence, and metropolitan residential status. Health and functional status indicators include the respondent's perception of the health status of the sample child and whether the child was limited in normal school, play, or other activities because of a health problem. Data on family income were collected but not available at the time this report was prepared; parental educational attainment and employment status serve as proxies for family income in our analysis.¹

Insurance Variables. Respondents were asked several questions regarding health insurance coverage for themselves and their family members during round 1 of the survey.² The responses were used to classify children as having private insurance or public insurance [Medicaid, Medicare, Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), TRICARE, or "other government" coverage].

For insured sample persons, additional questions were asked to differentiate those in managed care from those in traditional plans.³ For privately insured persons, we classified a plan as managed care when (1) the respondents indicated their insurance was an HMO, (2) the plan was identified as being purchased from an insurance company that was an HMO, (3) the plan requires the respondent to generally receive care from HMO physicians unless there was a medical emergency, or (4) the insurance plan requires the sample person to use a certain primary care doctor, group of doctors, or clinic for all all routine care. For publicly insured sample persons, we classified a plan as managed care when respondents reported either (1) coverage by a health plan known to be one of several Medicaid HMOs in their area or (2) enrollment in an HMO or other plan that requires the use of a certain primary care doctor, group of doctors, or clinic for all routine care. All insured sample persons not categorized by these rules as enrolled in managed care were

classified as having "traditional health plans."⁴ It should be noted that while the survey permitted categorization of respondents by the type of health plan they were enrolled in, questions regarding access and satisfaction, described below, referred to providers, not health plans.

Access, Satisfaction, Utilization, and Quality Variables. In round 2, participants were asked a series of questions about access to and satisfaction with health care at the family level, the individual level, and the level of the usual provider. We used all of the available access and satisfaction questions specific to the child or the child's usual provider.⁵ Utilization questions were asked in all three rounds to capture children's use of physician, nonphysician, and hospital services throughout calendar year 1996. All utilization data are specific to the child. A single indicator of quality was available: immunization status of the child. Immunization information was collected for children under 7 and indicates whether they were appropriately immunized for diphtheria, whooping cough, and tetanus (DPT); polio; measles, mumps, and rubella (MMR); and hepatitis B.

Statistical Analyses

We used bivariate and multivariate analysis techniques to assess differences in access, satisfaction, use, and quality of care for children enrolled in managed care plans and in traditional health plans. Multivariate analysis was used to account for potentially confounding variables, including the child's age, sex, race/ethnicity, family composition, parental education and employment, region of residence, metropolitan residence status, health status, limitation of activity status, and private versus public insurance. Logistic regression was used for binary outcome variables, and ordinary least squares regression was used for continuous outcome variables. All analyses were conducted with weighted data using SUDAAN version 7.52, which corrects standard errors used in computing test statistics for the complex sample design of MEPS (Shah, Barnwell, and Bieler 1996).

RESULTS

Health Insurance Characteristics of Children

Data from MEPS indicate that 85 percent of U. S. children under 18 years had some type of health insurance during early 1996 (Table 1). Almost 64 percent had private health insurance, while 21 percent had public health insurance

Table 1: Health Insurance Characteristics of Children Ages 0-17, 1996

<i>Insurance Characteristics</i>	<i>Sample Population</i>	<i>Estimated Population (in thousands)</i>	<i>%</i>
Private insurance [†]	3,362	43,550	63.8
Managed care plans	1,945	24,637	56.6
Traditional health plans	1,417	18,913	43.4
Public insurance only [‡]	1,548	14,370	21.1
Managed care plans	668	6,489	47.2
Traditional health plans	836	7,246	52.8
Uninsured	1,085	10,313	15.1
Total	5,995	68,232	100.0

Source: 1996 Medical Expenditure Panel Survey.

[†]Includes 108 children covered by both public and private insurance.

[‡]Includes children enrolled in Medicaid, CHAMPUS, Medicare, or other public hospital/physician insurance programs.

coverage only, including Medicaid, Medicare, CHAMPUS, or other public coverage.

The MEPS data also indicate that managed care is becoming the norm for children's health care delivery in the United States. By early 1996, more than half (57 percent) of privately insured children were enrolled in managed care plans. Managed care coverage was more prevalent among privately insured children than among children with public coverage (57 percent versus 47 percent; $p < .01$).

Demographic and Health Characteristics of Children in Managed Care and Traditional Health Plans

Table 2 provides a demographic and health status profile of the U. S. child population and the subpopulations enrolled in managed care and traditional health plans. Interestingly, examination of the distributional data for children enrolled in managed care and traditional health plans suggests that the two populations are quite similar across most demographic and health characteristics. There were no statistically significant differences between managed care and traditional health plan enrollees across age, sex, race/ethnicity, family composition, parent education, parent employment status, perceived health status, or limitation of activity (disability) status domains. However, there were significant differences by region and population density. Managed care plan enrollees appeared more likely to reside in the West and Northeast regions

Table 2: Demographic and Health Characteristics of Children in Managed Care and Traditional Health Plans; United States, 1996

<i>Demographic Characteristic</i>	<i>Percent Distribution of Selected Demographic Characteristics</i>			<i>Statistical Significance[‡]</i> p-Value
	<i>All Children[†]</i> (n = 5,995)	<i>Children in Managed Care Plans</i> (n = 2,613)	<i>Children in Traditional Plans</i> (n = 2,253)	
Age				
<5 years old	24.5	25.9	23.8	0.32
5-10 years	35.2	35.9	35.2	
11-17 years	40.3	38.2	41.0	
Sex				
Males	51.7	52.3	50.8	0.34
Females	48.3	47.7	49.2	
Race				
White, non-Hispanic	65.4	65.4	69.8	0.15
Black, non-Hispanic	15.7	16.5	14.3	
Other, non-Hispanic	4.8	5.0	4.9	
Hispanic	14.2	13.0	11.0	
Family composition				
Two parents	73.9	76.6	74.4	0.23
One or no parents	26.1	23.5	25.6	
Parent education[¶]				
Less than high school	14.4	10.8	13.8	0.10
High school	31.0	29.0	31.4	
Some college	24.3	25.8	23.6	
College graduate	30.3	34.3	31.2	
Parent employment status				
Two employed parents	47.1	49.2	49.3	0.07
One employed parent	41.2	41.2	37.6	
No employed parents	11.7	9.6	13.1	
Region				
Northeast	18.6	21.2	18.0	0.00
Midwest	23.6	20.8	28.0	
South	34.2	30.2	35.8	
West	23.7	27.8	18.2	
Residence				
MSA	80.2	88.8	72.2	0.00
Non-MSA	19.8	11.2	27.8	
Perceived health status				
Excellent or very good	80.3	80.5	81.0	0.77
Good, fair, or poor	19.8	19.5	19.0	
Limitation of activity				
Limited	7.4	7.3	8.5	0.22
Not limited	92.6	92.7	91.5	

Insurance				
Private	75.2	79.2	72.3	0.00
Medicaid	22.9	20.5	26.4	
Other public	1.9	0.4	1.3	

Source: 1996 Medical Expenditure Panel Survey

†Includes uninsured children.

‡Chi-square tests of independence for children's characteristics and health plan membership.

¶Based on parent with highest educational attainment.

and metropolitan areas and less likely to live in the Midwest and South and nonmetropolitan areas than traditional plan enrollees.

Access Characteristics

Overall, more than 90 percent of all children had a usual source of care in 1996 (Table 3). Yet, respondents for one-fifth of all children had difficulties in obtaining appointments or contacting their child's usual provider by telephone, and two-fifths of respondents reported that their child's usual source of care did not have office hours on evenings or weekends.

Of interest, differences between managed care and traditional health plan enrollees on these access measures were small or nonexistent. After adjustment for confounding factors, no significant differences were found for the access measures in Table 3.

Satisfaction Characteristics

As shown in Table 4, families generally report high levels of satisfaction with their children's care. Three-quarters of respondents reported that they were "very satisfied" with the professional staff at their child's usual site of care. An even higher proportion of families reported being very satisfied with the overall quality of care provided at the child's usual site of care. Less than 5 percent of respondents reported being "not too or not at all satisfied" with these same dimensions of health care. Moreover, less than 5 percent of respondents reported that their child's provider did not listen to patient concerns or provide needed health information or that they lacked confidence in the provider's ability.

As was the case with the access measures, there were no large differences in reported satisfaction between managed care and traditional health plan enrollees. Moreover, none of the differences was statistically significant after adjustment for potentially confounding factors.

Table 3: Access Characteristics of Children in Managed Care and Traditional Health Plans; United States, 1996

Access Characteristics	Percent		Odds Ratio ^f		
	All Children [‡] (n = 5,995)	Children in Managed Care Plans (n = 2,613)	Children in Traditional Plans (n = 2,253)	Unadjusted	Adjusted [¶]
Has no usual source of care (n = 5,980)	8.4	5.4	7.7	0.69	0.66
Provider has no evening or weekend office hours (n = 5,114)	40.5	37.1	42.4	0.80*	0.90
Somewhat or very difficult to get an appointment on short notice (n = 4,843) [§]	18.6	19.0	16.1	1.23	1.19
Waits more than 30 minutes to see provider (n = 4,833) ^{¶¶}	17.0	15.0	17.5	0.83	0.89
Somewhat or very difficult to contact provider by telephone (n = 5,065)	22.0	22.6	19.5	1.20	1.25

Source: 1996 Medical Expenditure Panel Survey

*Statistically significant at the 0.05 level, two-tailed test; **statistically significant at the 0.01 level, two-tailed test.

[†]The odds ratios are expressed as the odds of each outcome among children enrolled in managed care plans compared to those in traditional plans.

[‡]Includes uninsured children.

[¶]Adjusted for variables in Table 2.

[§]Among those who tried to get an appointment.

^{¶¶}Among those who had an appointment.

Table 4: Satisfaction Characteristics of Children in Managed Care and Traditional Health Plans; United States, 1996

Satisfaction Characteristics	Percent		Odds Ratio ^f		
	All Children [‡] (n = 5,995)	Children in Managed Care Plans (n = 2,613)	Children in Traditional Plans (n = 2,253)	Unadjusted	Adjusted [¶]
Satisfaction with professional staff at usual sites of care (n = 5,308)					
Not too or not at all satisfied	4.8	5.2	3.9	1.35	1.21
Very satisfied	74.6	74.6	75.8	0.94	0.95
Satisfaction with overall quality of care (n = 5,311)					
Not too or not at all satisfied	2.4	2.5	1.7	1.47	1.52
Very satisfied	81.6	81.0	84.8	0.77*	0.78
Provider does not listen to patient concerns or give needed information (n = 5,270)	3.0	3.1	2.8	1.10	1.16
Provider does not ask about prescription medications and other treatments (n = 5,135)	25.0	27.3	24.5	1.16	1.13
Not confident in provider's ability to help with a medical problem (n = 5,277)	3.7	4.0	2.9	1.39	1.35

Source: 1996 Medical Expenditure Panel Survey

*Statistically significant at the 0.05 level, two-tailed test.

[†]The odds ratios are expressed as the odds of each outcome among children enrolled in managed care plans compared to those in traditional plans.

[‡]Includes uninsured children.

[¶]Adjusted for variables in Table 2.

Table 5: Utilization and Quality of Care for Children in Managed Care and Traditional Health Plans; United States, 1996

Utilization Characteristics	Percent		Odds Ratio [†]		Mean Difference
	All Children [‡] (n = 5,995)	Children in Managed Care Plans (n = 2,613)	Children in Traditional Plans (n = 2,253)	Unadjusted	
Ambulatory care					
Percent with at least one physician visit (N = 5,995)	68.5	73.7	70.0	1.21*	1.16
Annual number of physician visits among users (N = 3,923)	3.4	3.6	3.5		0.07
Percent with at least one nonphysician visit (N = 5,995)	17.7	18.3	18.7	0.97	1.06
Annual number of nonphysician visits among users (N = 972)	3.2	3.0	3.6		-0.63
Annual number of emergency room visits (N = 5,995)	0.2	0.2	0.2		0.00
Inpatient hospital care					
Percent with one or more hospital admission [§] (N = 5,675)	2.2	2.1	2.61	0.78	0.92
Average hospital length of stay among hospital users (N = 124)	4.4	5.2	4.1		1.14
					1.38

Quality of care					
Percent of children under 7 years old with up-to-date DPT, polio, and MMR immunizations (N = 2,139)	66.5	64.2	68.7	0.82	0.79

Source: 1996 Medical Expenditure Panel Survey.

*Statistically significant at the .05 level, two-tailed test.

†The odds ratios are expressed as the odds of each outcome among children enrolled in managed care plans compared to those in traditional plans.

‡Includes uninsured children.

¶Adjusted for variables in Table 2.

§Excludes children under age 1 and children with one overnight hospital stay in 1996.

Utilization Characteristics

MEPS provides current data on use of ambulatory care and hospital services for U. S. children in 1996 (Table 5). These data indicate that 69 percent of children had at least one physician visit and 18 percent had at least one nonphysician visit⁶ during 1996. Additionally, children had an average of 0.2 hospital emergency room visits in 1996. Use of inpatient hospital care was rare: approximately 2.2 percent of children were hospitalized with an average length of stay of 4.4 days in 1996.

There were no significant differences in use of health care services between children enrolled in managed care and traditional health plans. Although children enrolled in managed care were more likely to have a physician contact in our bivariate analysis, this difference became statistically insignificant once we adjusted for confounding factors. Also, no significant difference was found in the use of emergency room and hospital services between children in managed care and traditional health plans. However, since very few children used hospital services in 1996 ($n = 124$), those estimates may not be reliable.

Quality Characteristics

The only clinical quality indicators in MEPS directly relevant to children concern immunization status. Examination of these data (Table 5) indicates that 66.5 percent of children under age 7 were up to date on immunizations for DPT, polio, and MMR. There were no significant differences in immunization rates between managed care and traditional health plan enrollees either before or after adjustment for confounding.

DISCUSSION

Much has been written about the rapidly evolving health care marketplace and the impact of managed care in the adult population. However, findings pertaining to adults may not be generalizable to children. Previous studies on managed care and children have not produced consistent findings on the impact of managed care on the well-being of children. Moreover, most previous studies have focused on the experience of children in Medicaid HMOs, rather than all children enrolled in managed care. The 1996 MEPS permitted us to present a current profile of access, satisfaction, use, and quality of care for children as a whole and assess whether differences exist between children enrolled in managed care and those in traditional health plans.

Because MEPS is an ongoing survey, these data also provide a baseline for documenting changes over time in access, satisfaction, use, and quality of care among children.

Our study has several notable findings. First, managed care coverage is becoming the norm for children: nearly half of all insured children were enrolled in managed care plans in 1996. Enrollment in managed care was also found to be more prevalent among privately insured children than among those with public insurance. However, recent reports from the field suggest that use of managed care has increased rapidly in state Medicaid programs, the main source of public insurance, so that managed care enrollment rates for publicly insured children may now be approaching those for private health insurance.

Second, comparisons of the characteristics of children enrolled in managed care and traditional health plans suggest that the two populations are remarkably similar in many respects, including how they are distributed by age, sex, race and ethnicity, and family composition. Of importance, we found no significant differences in the health status characteristics of children in managed care and traditional health plans. This suggests that biased selection may not be prevalent at the national level, although the reader should keep in mind that our health status measures were limited to respondent perceptions of the health of sample children. Moreover, these are aggregate findings that may not match the experience of any given health plan.

Third, results on access to and satisfaction with care indicate that the majority of children in the United States enjoyed good access to health care and that their families were generally highly satisfied with the health care system during 1996. For example, we found that over 90 percent of insured children had a usual source of care and over 95 percent of families reported that they were satisfied or very satisfied with the quality of care their children received at their usual source of care. However, the analysis also revealed some problem areas. Approximately one in every five families reported that it was somewhat or very difficult to get an appointment or to contact their child's provider by telephone.

Fourth, and key to our inquiry, our analysis found few statistically significant differences in access, satisfaction, use, or quality of care between children enrolled in managed care and traditional health plans. The bivariate analysis found only three statistically significant differences: children enrolled in managed care were more likely to receive physician services, more likely to have access to care during evening or weekend office hours, and less likely to report being very satisfied with overall quality of care. However, after

controlling for confounding factors, none of these differences remained statistically significant. Thus, we conclude that there are no statistically significant differences in self-reported access, satisfaction, use, or quality of care between children enrolled in managed care and traditional health plans.

The absence of significant differences in access, satisfaction, use, or quality of care between children enrolled in managed care and traditional health plans merits additional discussion. The absence of differences could be an indication that, as managed care has evolved to become the predominant mechanism for organizing and delivering care, differences in the care provided through managed care plans and traditional plans have largely disappeared. Indeed, physicians in private practice typically treat patients with a variety of different types of coverage, including managed care and traditional plans. They may be unaware of the type of coverage a patient has during the actual visit. As a consequence, the type of care delivered may not vary by type of health plan.

However, before this conclusion can be drawn, some alternative explanations for the lack of significant differences need to be considered. Specifically, the absence of statistically significant findings could be attributable to (1) measurement error in categorizing health plans; (2) error in measurement of access, satisfaction, use, or quality of care outcomes; or (3) insufficient sample size to detect subgroup differences within the child population. Each of these potential sources of errors is discussed below.

Health Plan Measurement Error. When this analysis was conducted, only household respondent data were available for classifying health plans. Because household respondents typically have limited knowledge of the characteristics of their health plans, we choose not to attempt drawing finer distinctions among managed care plans (e.g., HMO, PPO, POS, etc.). However, we recognize that different types of managed care may affect access, satisfaction, use, and quality differently. By combining the different types of plans into the broader category of "managed care," we may be missing important outcomes specific to different types of plans. More precise information on plan characteristics will eventually be released from the Insurance Component of MEPS. These data are essential for conducting analyses using finer distinctions of managed care. It is critical that AHRQ and its contractors produce this important data expediently if the MEPS is to fulfill its promise for providing accurate and current information on health plan characteristics.

Outcome Measurement Error. As discussed, our analysis was restricted to a small set of access, satisfaction, and quality indicators. In addition, these indicators primarily focused on the child's health care provider and not on

experience with health plan policies, such as prior authorization or availability of pediatric subspecialty care. Accessibility to pediatric subspecialty care is an especially critical indicator of access and quality that many argue differentially affects children in managed care versus traditional health plans. Indeed, numerous anecdotal reports have surfaced in recent years highlighting the tendencies of some managed care plans to restrict access to pediatric subspecialists. However, such data were not collected in the 1996 MEPS. Future MEPS panels should incorporate a broader range of outcome indicators relevant to children, drawing, for example, from questionnaires developed by the Consumer Assessment of Health Plans Study (CAHPS) or the Foundation for Accountability (FACCT).

In addition, many of the indicators studied used limited response categories (e.g., very satisfied, satisfied, not too satisfied, not at all satisfied) that may not be particularly sensitive in distinguishing differences between managed care and traditional health plans. It is possible that there were significant differences in satisfaction between children in managed care and traditional health plans, but the survey tools failed to detect them. Several major initiatives designed to improve the wording and content of survey questions on access and satisfaction are underway, including activities sponsored by AHRQ and the National Committee for Quality Assurance. These activities should lead to the development of more sensitive outcome measures (e.g., by using numeric response scales) such that finer distinctions might be detected in enrollee experiences with health plans. For example, rare but severe—even egregious—problems of the anecdotal variety involving managed care plan practices may not be elucidated through survey instruments. Reports of such extreme anecdotes, which reflect poorly on managed care, appear sporadically in the lay press. These anecdotes have furthered “patients’ bill of rights” legislation and other manifestations of the anti-managed care backlash.

Finally, our satisfaction data primarily relate to children’s health care providers and not to the performance of their health plans per se. Ideally, we would have comparative data on respondent perceptions of health plan practices as well as provider practices related to their children’s care. MEPS did conduct a consumer satisfaction survey of health plan practices (e.g., selection of health plan providers, ease in obtaining referrals, problem resolution, paperwork burden, etc.). However, it is impossible to distinguish children’s experiences from those of other household members. Thus, additional survey questions specific to children’s experience with health plans are needed to determine conclusively whether differences exist in this domain of health care outcomes.

Sample Size Issues. These findings are based on an analysis of children as a whole. By doing so, we may have missed differences for subgroups of children. For example, previous localized studies suggest that children with chronic illnesses and disabilities are more likely than other children to experience access difficulties in managed care (Fox, Wicks, and Newacheck 1993; Karlson, Sumi, and Braucht 1990; Horwitz and Stein 1990). We attempted to use MEPS to analyze differences in outcomes for the subgroups of children with disabilities in managed care and traditional health plans. However, there were insufficient numbers of cases to do so. For example, only 481 children in the 1996 MEPS panel had a limitation in their usual activities, a proxy for disability. Larger samples are needed to provide robust findings for vulnerable subgroups of the child population. The addition of new panel members over time to MEPS will help to resolve this problem by increasing the overall sample size. Another approach is to oversample vulnerable subpopulations. This was done in the 1997 MEPS panel, where an oversample of children with disabilities was included. However, the complete data set from 1997 was not available at the time this report was prepared.

CONCLUSION

Our study found essentially no evidence indicating that the performance of managed care is any better or worse than traditional health plans across the important domains of access, satisfaction, use, and quality of care. This conclusion is provisional, however, because of limitations in MEPS related to the absence of precise data to distinguish types of managed care plans, the potentially insensitive nature of some of the outcome measures, and inadequate sample sizes to detect differences for vulnerable populations.

NOTES

1. Information on parental education and employment was obtained by linking child-parent data. A total of 182 children were missing the parental linkage variables and therefore do not have education and employment information.
2. Data regarding insurance coverage were collected during round 1, while the information on access to care was collected during round 2. If a child changed insurance coverage between the round 1 and round 2 enumerations, it is possible that some of the responses to questions about access to care may not correspond to the insurance coverage coded for the child in our analysis. However, the data collection periods were contiguous (March to July and August to November);

- consequently, we believe that any discordance in results related to the two data collection periods will be limited. Moreover, we have no reason to expect that a systematic bias would occur in our results from children switching health plans.
3. Children covered exclusively by CHAMPUS or TRICARE (coverage for civilian dependents of military personnel) were not asked about HMO coverage and were therefore excluded from analyses comparing managed care and traditional health plans ($n = 44$).
 4. This managed care categorization scheme was developed originally by researchers at AHRQ (Weinick and Cohen 2000). As constructed, the MEPS data available at the time of our study did not permit identification of children with *both* HMO and non-HMO coverage. By default, such children are classified as having HMO coverage.
 5. For the child's usual source of care, the survey gathered information on the following: whether the provider had evening or weekend office or clinic hours, how difficult it usually was to make an appointment or contact the provider by phone, how long someone in the family usually waited to see the provider after arriving on time for an appointment, whether the respondent was satisfied with the professional staff at the child's usual site of care, the overall quality of care given by the child's provider, whether the provider listened to patient concerns or asked about other treatments or medications, and whether the respondent was confident in the ability of the child's provider to deliver medical care.
 6. Nonphysician visits include visits to the following types of providers: chiropractors, dentists and other dental care providers, nurses and nurse practitioners, physician assistants, physical therapists, psychologists, optometrists, podiatrists, and other medical providers.

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