Managed Care for Children: Effect on Access to Care and Utilization of Health Services

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Abstract

The rapid trend toward enrolling children in managed care has occurred largely without conclusive evidence about the effects of these arrangements on two important aspects of care: access and utilization. Although the effect of managed care on these measures has been studied more widely in the adult population, the results may not be applicable to children, who have unique health care needs centering around prevention and early treatment of acute illnesses to avoid long-term health problems. Moreover, several methodological challenges make it difficult to evaluate the impact of managed care on health care access and utilization in general.

This article reviews what is known about the effect of managed care on access to health services, as well as utilization of hospital care, emergency department (ED) visits, primary care services, and specialty services for the pediatric population. In each area, findings from privately insured children and Medicaid enrollees are considered separately. There is little conclusive evidence on the effect of managed care on access to and utilization of pediatric health services. A recurring theme is that the effect of managed care is dependent on several factors, including whether providers assume financial risk through capitated reimbursements or retain fee-for-service payments; the comprehensiveness of benefits offered by health plans; and the level of cost sharing required of families. Among privately insured children, for example, managed care usually has been associated with higher primary care visit rates, though the benefit of managed care is reduced when fee-for-service plans cover preventive care and require minimal or no cost sharing for these services. Among Medicaid recipients, studies suggest that managed care is more likely to be associated with a decrease in preventive visits when provider payments are capitated. Attempts to decipher effects by health plan type are made more difficult by the rapid evolution of both managed care and fee-for-service plans, which often blur the distinction between these two entities. Nonetheless, in some areas, managed care does appear to have an identifiable effect on pediatric health services. For Medicaid recipients, managed care has been associated with decreased emergency department use and decreased access to specialty care for chronically ill children. As enrollment of children in managed care plans increases, the need continues for methodologically sound studies evaluating the effect of these arrangements on the delivery of pediatric health services and on health outcomes.
The rapid growth of managed care is one of the most significant changes affecting the delivery of child health care since the turn of the century. Children are disproportionately represented in managed care plans because these plans tend to market through employers to enroll working adults and their families. In addition, most states are rapidly enrolling Medicaid recipients—primarily women of childbearing age and children—in managed care plans. Managed care now plays a central role in the delivery of children’s health care services within both the private and the public sector.

Despite the explosive growth of managed care in recent years, only a small body of scientific information is available about the effect of managed care arrangements on access to and utilization of health care services by children and adolescents in the United States. The purpose of this article is to summarize this information. In each section, findings about the effects of managed care for privately insured children will be discussed first, followed by a discussion of the effects of Medicaid managed care. The final section and Table A1 at the end of this article will summarize results.

**Potential Effect of Managed Care on Access to and Utilization of Care for Children**

**Unique Characteristics of Child Health Care**

Most children are physically healthy. Their health care needs include preventive services; acute services for frequent illness and injuries; management of developmental, school-related, psychosocial, and emotional problems; and the occasional use of specialty, emergency, or inpatient care. Evaluation of access and utilization should focus on these types of services.

Preventive care is fundamental to child health care. Children are and should be high utilizers of preventive services, because the appropriate receipt of preventive services may reduce adverse health outcomes later in life. Children are also high utilizers of acute care services for illnesses, injuries, and minor acute conditions. Prompt and appropriate treatment for acute conditions can prevent long-term complications. While most acute care is provided in primary care offices, a substantial amount is provided in emergency departments. There is much debate about the costs and overuse of emergency departments, particularly by impoverished patients. It is important to examine the performance of managed care systems with respect to both preventive and acute care for children.

While most children are physically healthy, about 3% to 5% suffer from serious, handicapping chronic conditions, and these children account for a disproportionate share of all child health care expenditures. There is substantial concern that managed care systems restrict services for this population. A related issue is the provision of care for individuals with chronic developmental, emotional, and psychosocial problems, which affect up to 20% of all children and adolescents. This is another group known for its frequent use of health services. It is critical to assess the effect of managed care on these vulnerable groups of children.

Another crucial issue in pediatrics is the health status and health care of poor children, many of whom are covered by Medicaid. Poverty is one of the best predictors of mortality, activity limitations, and use of health care resources, and the impact of Medicaid managed care should be systematically evaluated.

**Potential Advantages of Managed Care for Children**

A major theoretical advantage of managed care over traditional fee-for-service delivery systems is that managed care plans normally have more comprehensive information about their enrolled populations and can
more effectively track service use patterns. For example, while fee-for-service plans may not even know how many children they have enrolled, managed care plans usually have well-developed data systems containing information about children enrolled in their health plans and the services they receive, including preventive visits and immunizations. Managed care plans can use these data to develop strategies aimed at improving access to care and the quality of services received by the children and families enrolled. However, unless automated data systems in these plans are quite sophisticated, the information available may capture only the overall patient encounter, rather than the specific activities included during a patient’s visit to his or her health care provider.

Managed care plans theoretically have a greater incentive than traditional fee-for-service systems to promote preventive care in order to maximize the role of the primary care gatekeeper and reduce future health care expenditures for therapeutic care. This is particularly important for children, who may benefit most from preventive services. The use of preventive health services can be encouraged using numerous mechanisms, including lower out-of-pocket costs for patients; financial or administrative incentives for providers, such as higher reimbursement rates for preventive services or provider profiles that include the implementation of preventive health services as a quality indicator; and coordination of preventive care with other private or public health care providers. Health maintenance organization (HMO) enrollees traditionally have had lower out-of-pocket costs for preventive care than fee-for-service patients. However, this difference may be narrowing for two reasons. First, health insurance legislation in some states now requires insurance plans to cover preventive services for children with no cost sharing required. Second, the Vaccines for Children (VFC) program has restricted patient charges and improved physician reimbursement for immunizations. The Medicaid program does not rely on copayments and offers fairly broad coverage, so direct patient costs for preventive services are irrelevant to that population, reducing the advantage of Medicaid managed care. Moreover, from the point of view of managed care plan administrators, the incentive to promote preventive care may be tempered by the fact that the plan’s investment in preventive care will result in cost savings well into the future, when many enrollees will no longer be plan members because of the high disenrollment rates and plan switching that typically occur in the health care sector. As a result, there may be substantial variability in the extent to which managed care plans promote prevention; and external factors, such as Health Plan Employer Data and Information Set (HEDIS) guidelines to report on and reward the delivery of preventive services, may play an important role.

Other potential advantages of managed care in general, and HMOs in particular, have been listed elsewhere. For children with chronic illnesses, analyses of the benefit packages and organizational characteristics of HMOs suggest some potential advantages resulting from an improved emphasis on prevention, primary care, and service coordination. The potential cost savings and efficiencies of managed care plans might be translated into better access to services, enhanced quality of care for patients, and lower total expenditures on health services.

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### Potential Disadvantages of Managed Care for Children

The major concern about managed care arrangements is that the strong incentives to control costs may limit needed medical services, particularly for vulnerable groups whose medical care is either costly or difficult to deliver. For the pediatric population, these vulnerable groups include impoverished children and those with chronic medical, mental, or emotional conditions. Concerns about obtaining appropriate services and paying for these services are paramount for most families with chronically ill children. Managed care plans, which attempt to minimize costs by limiting hospitalizations, referrals, and expensive
therapeutic services, may have greater incentives to either exclude potential enrollees with severe chronic illnesses or limit the breadth of services covered. Because the majority of children in managed care plans are healthy, a plan may be able to satisfy the majority of families while denying needed care to that subset of children who have the most costly medical needs. Furthermore, a high degree of risk sharing by primary care physicians may encourage them to limit necessary referrals or diagnostic tests for children with complex conditions. Burdensome authorization requirements and reduced access or denied referrals to needed specialists have been noted as disadvantages of HMOs for chronically ill children.15,16

A similar concern exists about managed care programs for impoverished children, because these patients, like children with chronic conditions, often face barriers to health care, which may increase under the administrative constraints of gatekeeper systems; and because of the higher rates of health problems among poor children.1 By limiting services, managed care systems may compromise the quality of care for this vulnerable population. Concern has also been raised about the exclusion of traditional “safety net” providers (such as public health clinics or neighborhood health centers) from managed care contracts, because many disadvantaged and high-risk children traditionally have received comprehensive services in these settings. Shifting to a managed care plan may interrupt the usual source of care for this population, forcing them to obtain services from providers less experienced in caring for children with complex needs.18

Methodological Challenges in Evaluating Managed Care Systems

Experts have noted methodological difficulties in evaluating the effects of managed care plans.11,13,14,19 These constraints are a major reason for the dearth of studies evaluating managed care effects, and perhaps for the inconsistent and often contradictory findings. As described in the article by Hughes and Luft in this journal issue, managed care plans differ widely in their structure, financial arrangements, and utilization management, and it is difficult to make generalizations about even theoretical effects on access or utilization of care. The effect of managed care depends on the extent of financial incentives and disincentives placed on the providers, and on the structural and financial arrangements of the comparison groups. Consequently, it is possible to observe even greater variability among different types of managed care plans than between managed care plans and fee-for-service arrangements.

Fee-for-service plans are evolving in the direction of managed care, particularly in terms of utilization management mechanisms, including preapproval for elective procedures; the monitoring of patients’ progress following hospital admissions; discharge planning; and case management services for high-cost patients. Some fee-for-service plans are also negotiating discounted charges for services. Perhaps because of these changes, the rise in health care costs has been dampened, even in fee-for-service systems.19 These changes blur the distinction between managed care and fee-for-service plans, making it more difficult to isolate the effects of managed care on access, utilization, and outcomes.

One of the difficulties in studying the impact of managed care is the problem of patients themselves choosing managed care or fee-for-service plans, and physicians electing to join organizations in part based on whether the practices accept managed care patients.14 Because of this self-selection of patients and physicians into different types of plans, it is difficult to estimate whether any differences in health care utilization or outcomes are attributable to financial and administrative incentives, or whether baseline differences in enrollees’ behavior and health status or physicians’ practice styles partially explain these variations. Several studies have documented that patients enrolled in HMOs tend to have lower prior health care expenditures and utilization
patterns, particularly for hospitalizations, than patients who remain in fee-for-service care. However, in most studies, the health status of HMO enrollees does not appear to be different from the health status of fee-for-service patients, even though the HMO enrollees used fewer services prior to enrollment. Although the reason for this relationship remains uncertain, it may reflect the imprecise measures of health status currently available (resulting in no detectable difference), while the availability of more precise prior utilization and cost data allows smaller differences among groups to be detected. The exception to this pattern is that Medicare beneficiaries who enroll in HMOs tend to be healthier than their counterparts in traditional fee-for-service Medicare plans.

The lower prior health care utilization of HMO enrollees is not entirely understood. One possibility is that HMOs attract patients who prefer not to use medical services and are cost-conscious and health-conscious individuals. Another possibility is that patients who must switch physicians to join HMOs are more likely to do so if they have weak prior relationships with their physicians. Similarly, high utilizers of medical care may have established bonds with their physicians and may be less likely to switch health plans when this requires switching physicians. This is an important point because the newer forms of managed care, such as independent practice associations (IPAs) and preferred provider organizations (PPOs), often do not require switching physicians at enrollment. Thus, the selection of lower-risk individuals into managed care plans has historically experienced by HMOs may not occur with these newer managed care arrangements. A study of the types of individuals who chose to enroll in HMOs, PPOs, and fee-for-service plans found that the voluntary enrollment of lower-risk patients was strongest in HMOs and much weaker in PPOs, where switching physicians was less likely to be required. Studies evaluating voluntary enrollment into Medicaid managed care also have found that children who chose to enroll in HMOs had lower baseline costs.

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It is important to note that financial disincentives used by managed care plans, including patient copayments, do not apply to the Medicaid population. Findings on the effects of managed care for the privately insured population may not apply to Medicaid recipients, and vice versa. The majority of studies on managed care among children have focused on Medicaid beneficiaries and must be interpreted carefully before extrapolating to the privately insured population.

Effect of Managed Care on Access to Health Services

Although access to health care is an intuitive concept and some experts have developed frameworks for defining access, it is
difficult to measure the effect of health care arrangements such as managed care on access to health services, and information in this area is limited. Some measures that imply access include having a regular primary care provider or usual source of care; the first contact being with a primary care provider; and a patient’s perception of, or satisfaction with, the availability of needed services. Utilization of services, however, is a reflection of access and many other factors.

The fact that managed care plans assign a primary care provider to each enrolled patient implies some level of potential access; fee-for-service systems do not usually engage in this practice. However, the assignment of a primary care provider does not, by itself, ensure access to health services, and the majority of children—even the uninsured—have a usual source of health care.

**Access to Health Care for Privately Insured Children**

There is a dearth of information about the effect of managed care systems on access to care for nonpoor children who are covered by private insurance, and the information that is available addresses only some of the indicators of access that have been identified. For example, one useful barometer of access to care is parent satisfaction with access, but only a few studies on this topic exist. A Commonwealth Fund survey in three U.S. cities found that HMO and PPO enrollees were less satisfied with access to services for their children and for themselves than were enrollees in fee-for-service plans. Moreover, low-income families in managed care plans were less satisfied with their access to health services than either low-income families in fee-for-service plans or higher-income families in managed care plans. It is possible that the poorer satisfaction ratings observed among lower-income patients enrolled in managed care reflect the lack of choice among plans offered to this group by their employers, rather than any true managed care effect. Nonetheless, the finding of less satisfaction with access to health services among managed care enrollees was supported by results from the landmark Medical Outcomes Study, which focused on adults.

The finding of poorer access to care among disadvantaged groups is supported by the 1994 Robert Wood Johnson Foundation National Access Survey, which documented that adults and children enrolled in HMOs were more likely to report an unmet health care need and difficulty in scheduling an appointment, but reported higher overall visit rates, than either PPO or traditional fee-for-service enrollees. When the analysis was stratified by income level, low-income enrollees in both HMOs and fee-for-service plans reported poorer access to care than higher-income enrollees. These results suggest that, compared to high-income enrollees, privately insured low-income persons may experience greater access barriers within both HMOs and traditional fee-for-service settings.

**Access to Health Care Under Medicaid Managed Care**

Substantially more research has been done on access to care under managed care systems for poor children and pregnant women covered by Medicaid. Although his-
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Historically, improvements in access to care were noted with enrollment in traditional fee-for-service Medicaid, compared to nonpoor children, poor children still lack adequate access to both primary and specialty health services in spite of their Medicaid coverage. Thus, it is important to assess whether children fare better under Medicaid managed care than under traditional fee-for-service Medicaid. Overall, studies have yielded mixed results, with no consistent improvement in access to care resulting from Medicaid managed care.

In Medicaid managed care demonstration projects during the 1980s, the effect of managed care on indicators of access was mixed. In Arizona, for example, families were more likely to report a usual source of care, but less likely to report being able to obtain sick care for their child, after the implementation of managed care. An analysis of the Medicaid primary care gatekeeper programs in California and New Jersey found that in California, where primary care gatekeepers were paid on a fee-for-service basis with a case management fee, the percentage of all children with at least one primary care visit did not change substantially after enrollment in managed care (42% predemonstration versus 38% postdemonstration). In New Jersey, however, where gatekeepers were paid on a capitated basis, the percentage of children with a primary care visit decreased (64% predemonstration versus 58% postdemonstration). In comparison sites that continued fee-for-service Medicaid, the percentage of children with a primary care visit did not change during the same time period. A similar study in Ohio also found a reduced likelihood of having at least one physician visit for continuously enrolled children and adults (mostly women) in managed care. These results suggest that, for Medicaid beneficiaries, the effect of managed care on access to primary care services may depend on the payment structure within the Medicaid managed care program, with a reduction in access to primary care services being more likely with capitated payments.

Among low-income pregnant women, studies have found no consistent effect of managed care on access to prenatal services. A study in California and Missouri counties found no overall improvement in prenatal care when comparing prepaid capitated plans to fee-for-service plans. Another study examining the effect of a mandatory Medicaid case management program on prenatal care found low utilization of prenatal care in both study and comparison fee-for-service groups, with no improvement in the case management group. Finally, an analysis comparing Medicaid recipients in three managed care plans to those in fee-for-service plans in the state of Washington found no consistent managed care effect on the prevalence of late or no prenatal care. Under all arrangements, Medicaid enrollees had lower use of prenatal care than did non-Medicaid enrollees.

Some information is available regarding patients’ perceptions of access to child health services under Medicaid managed care. A telephone survey of adult Medicaid recipients, many of whom had children enrolled in Medicaid, found that those in managed care plans were more likely to have a usual source of care other than the emergency department; see the same clinician at their usual source; contact their regular provider or health plan rather than the emergency department for urgent or after-hours care; and experience shorter appointment waiting times than did fee-for-service Medicaid recipients. Several surveys of managed care enrollees from the Medicaid demonstration projects during the 1980s also documented higher patient satisfaction with quality of care, availability of care, and choice of physician under Medicaid managed care than under fee-for-service Medicaid.

For chronically ill children covered by Medicaid, there is some evidence of decreased access to specialty services associated with managed care, this is discussed in greater detail in the utilization section of this article.

In summary, there are insufficient information and mixed results regarding the

Poor children still lack adequate access to both primary and specialty health services in spite of their Medicaid coverage.
Effect of Managed Care on Utilization of Health Services

The effects of managed care on utilization of services for children have been reviewed previously.\textsuperscript{19,49,51} The preponderance of studies have involved Medicaid recipients, and extrapolating findings from Medicaid managed care to the privately insured, nonpoor child population, for whom the system of fee-for-service health care is often markedly different, should be done with caution. Also, most studies of managed care for children have involved group- or staff-model HMOs, with fewer studies assessing IPA or point-of-service (POS) model health plans, in which cost-control strategies and provider incentives may be quite different.

Hospital Utilization

Because hospital care accounts for approximately 40% to 50% of total health care expenditures for children,\textsuperscript{52} many studies have evaluated the ability of managed care plans to affect hospital utilization. For insured adults and children combined, managed care systems, particularly HMOs, have reduced hospital admissions and hospital costs substantially.\textsuperscript{53} However, findings for children specifically are more mixed.

For Privately Insured Children

Because hospitalization rates for children are low and the average length of stay is short, one would expect managed care to have smaller effects on hospital use for children than for adults. Consequently, it would take large-scale studies to evaluate the effect of managed care on inpatient use for children. The RAND Health Insurance Experiment (HIE), a landmark randomized clinical trial, allocated families into a staff-model HMO, Group Health Cooperative of Puget Sound, or into traditional fee-for-service plans that required no deductible or copayments (free-care) or various levels of cost sharing. This study found that the hospitalization rate for children in the HMO experimental group was 45% lower than in the free-care plan, but not significantly different from the fee-for-service plans that required cost sharing.\textsuperscript{38} It is unlikely that this reduction in hospitalizations achieved by the HMO in comparison to the free-care group could be achieved today, because the HIE was performed 15 years ago, and since that time hospitalization rates for children have declined.\textsuperscript{54}

One recent investigation found that 82% of HMO enrollees, 61% of POS enrollees, and 48% of fee-for-service enrollees were discharged within one day of delivery.

However, have found that managed care had little effect, or a negative effect, on access to primary care or office visits for children and pregnant women, depending on the reimbursement mechanism. There is also some evidence of decreased access to services for special needs children in managed care plans. It is important to note that baseline levels of access for children covered by traditional fee-for-service Medicaid often have been quite poor, and switching to Medicaid managed care has had greater potential to improve access for Medicaid enrollees than for privately insured children. More studies are needed to evaluate changes in access to care for Medicaid enrollees who have recently switched from fee-for-service to managed care plans, and to evaluate the relative impact of capitation versus fee-for-service reimbursement within Medicaid managed care.
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comparing health care utilization by children in IPA plans to that of a similar population under fee-for-service care found no differences in hospital admission rates between the two groups, but slightly higher inpatient expenses in the IPA group. However, the authors noted that the sample of 1,280 children in this one community was too small to evaluate hospital use in depth.28

One area that has received attention recently is postpartum maternal and newborn discharges under managed care plans. During the past 40 years, the average length of postpartum hospital stays in the United States has declined dramatically for mothers and their newborns, from 7 to 10 days in the 1950s to 1.4 days in 1996. Currently, postpartum lengths of stay in the United States are among the shortest in the world.55 Others have summarized the literature on outcomes associated with early discharge and have cautioned about the potential medical risks of this practice, particularly for poor or medically high-risk women.56 Although managed care is believed to have influenced the trend toward shorter postpartum stays, it is important to note that hospital lengths of stay are decreasing in all populations. Studies comparing fee-for-service to managed care plans have found somewhat mixed results, though most have reported shorter lengths of stay under managed care. One recent investigation found that 82% of HMO enrollees, 61% of POS enrollees, and 48% of fee-for-service enrollees were discharged within one day of delivery.57 These differences varied across geographic regions, with no differences in the Northeast. Also, among women discharged within the first postpartum day, readmissions were higher for HMO enrollees than for fee-for-service enrollees, although readmission rates for newborns did not vary by plan type.

Under Medicaid Managed Care

Substantial research has been conducted on the effect of Medicaid managed care on hospital utilization, though no consistent managed care effect has been observed across studies. A review of 25 published and unpublished studies on Medicaid managed care prior to 1992 found that in most cases there were reductions or no change in hospital utilization associated with managed care among adults and children combined.58 Another analysis of mandatory and voluntary enrollment in Medicaid managed care during the late 1980s in Ohio found no difference in hospital utilization associated with mandatory enrollment in managed care. However, in the sites where managed care enrollment was voluntary, hospital admissions and the number of inpatient days were reduced for continuously enrolled women and children; pregnancy and newborn care did not account for these changes.26 In a controlled clinical trial of a Medicaid HMO in New York City in the late 1980s, Medicaid families were randomly assigned to either fee-for-service or HMO plans, though actual HMO enrollment was voluntary.25 No differences were observed in
hospitalization rates, hospital resource utilization, or hospital costs between the HMO and fee-for-service groups. Also, no difference was found in hospital utilization when comparing the randomly assigned HMO group to a group that voluntarily chose to participate in the Medicaid HMO.

In conclusion, findings regarding the impact of managed care on pediatric hospital utilization are mixed. For children covered by private insurance, there is a paucity of recent information from rigorous studies, in spite of a great deal of rhetoric about the effects of managed care. For women and newborns, however, there is a growing body of evidence suggesting that enrollment in managed care plans may be associated with shortened postpartum hospitalizations, though the effect of this change on health and health care service outcomes remains uncertain. Among children enrolled in Medicaid, results usually have shown no difference by plan type, or somewhat lower hospitalization rates associated with managed care enrollment, with little data from recent evaluations. There is some evidence that lower hospitalization rates observed in some Medicaid managed care plans were due to patients self-selecting into managed care, and did not reflect any true effect of managed care per se.

With trends leading to reductions in hospitalization rates and stricter controls on hospital use across all types of health plans, the effect of managed care on pediatric hospitalization rates—which were low to begin with—is likely to be small and difficult to detect. This finding is in contrast to those of hospital use among adults, for whom managed care has been shown to reduce both admission rates and total inpatient days.48

Emergency Department (ED) Utilization

Because one of the objectives of managed care is increased reliance on the primary care provider or “gatekeeper” and reduced use of discretionary episodic care, one would expect managed care systems to minimize ED utilization. Most managed care plans have patient and/or provider controls that pertain to ED use. These include patient copayments, required authorization by the primary care provider, gatekeeping leading to denials within the ED, provider profiling, and financial penalties for providers.

For Privately Insured Children

There are no published reports of the effect of managed care on ED utilization among nonpoor children covered by private insurance specifically; studies have not differentiated ED use from the use of other ambulatory services.

Under Medicaid Managed Care

Because poor, urban populations covered by Medicaid have the highest rate of ED visits for nonurgent conditions,59 Medicaid managed care plans have focused on reducing inappropriate ED use. A number of studies have found that ED use is lower under managed care than under fee-for-service Medicaid. A review of Medicaid demonstration projects during the 1980s found that all nine evaluations reporting ED utilization documented that use was reduced by about one-third in managed care plans, as compared to fee-for-service plans.19 Other Medicaid managed care programs also have noted consistent reductions in ED visits.60,61 In addition, an increase in the severity of ED visits has been observed,62 suggesting that discretionary or inappropriate ED visits were avoided in managed care settings. A randomized clinical trial of a Medicaid HMO found no differences in ED visits comparing HMO to fee-for-service enrollees.25 However, ED use was measured by parent diaries in this trial and may have been recorded inaccurately.

There is a major concern about managed care plans placing controls on pediatric ED visits and consequently reducing ED use among poor children. A small group of high-risk, critically ill children enrolled in Medicaid legitimately require ED care, but are denied or fail to receive appropriate care in the ED or elsewhere,63 or are lost to follow-up64 because of restrictions on utilization practices. A survey of children who were denied authorization for nonemergency

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Utilization of Primary Care Ambulatory Services

Because most managed care plans assign patients to a primary care provider, and this typically does not occur among fee-for-service indemnity plans, one may expect a greater utilization of primary care ambulatory services for children enrolled in managed care plans. As discussed below, however, research suggests that any difference in utilization associated with health plan types is most likely due to differences in cost sharing and physician reimbursement mechanisms across health plans.

For Privately Insured Children

For privately insured children, it is important to interpret the effects of managed care in comparison to the benefit coverage for the fee-for-service population. For example, most early studies of HMO enrollment among adults and children combined documented higher rates of office and preventive visits than among fee-for-service controls who lacked coverage for these services. Reviews of more recent studies, again for children and adults combined, typically found more physician office visits per enrollee, or no difference in utilization, in managed care plans, as compared to fee-for-service indemnity plans. These findings held true across various types of managed care arrangements. The attenuated effect of managed care in more recent investigations may be attributed to recent changes in benefit coverage across many fee-for-service plans, which now typically cover preventive care, immunizations, and other primary care services with little or no copayment.

In the RAND HIE, children assigned to the HMO had 20% more office visits and 40% more preventive visits than did children assigned to the cost-sharing plans, and 20% more office visits but no difference in preventive visits compared to children assigned to free-care. Similarly, a study in Rochester, New York, found significant increases in preventive visits, acute illness visits, chronic illness visits, after-hours visits, weekend visits, out-of-office laboratory evaluations, and referrals to medical specialists among IPA enrollees as compared to children under fee-for-service care, after controlling for self-selection. At the time of the study, fee-for-service control patients typically had copayments for preventive and many primary care services at levels similar to the RAND HIE copayment groups.

A more recent study examined previously uninsured or underinsured children in New York State who enrolled in Child Health Plus, a state-funded health plan for poor children who do not qualify for Medicaid. While the overall population of children experienced increased use of preventive, acute, primary care, and specialty services after enrollment in Child Health Plus, these increases did not vary among children enrolled in managed care versus fee-for-service commercial plans. Patient copayments for ambulatory services were similar for managed care and fee-for-service enrollees, most likely accounting for the lack of an effect attributable to managed care.

The effect of patient cost sharing on differences in ambulatory care utilization has been documented elsewhere. Earlier investigations also have found that differences in ambulatory use between HMO and fee-for-service populations disappeared when HMO enrollees were compared to control patients having comparable ambulatory coverage. These studies suggest that the historical advantage of managed care may be diminished with the reduction or elimination of copayments for preventive care services in many fee-for-service plans.

Any difference in utilization associated with health plan types is most likely due to differences in cost sharing and physician reimbursement mechanisms across health plans.
Under Medicaid Managed Care

Studies of the effect of managed care on ambulatory utilization for Medicaid enrollees again have found mixed results. The systematic evaluation of Medicaid demonstration projects found an increase in ambulatory office visits among adults and children enrolled in managed care in nearly half of the programs (11 of 25), though the remainder showed no managed care effect (5 of 25) or a decrease (8 of 25) in the visit rate compared to fee-for-service Medicaid.Managed care programs that paid the primary care gatekeeper on a fee-for-service basis were more likely to be associated with increases in visits, while programs that used capitated reimbursements were more likely to experience decreases or no change in visit rates. Group- and staff-model HMOs were more strongly associated with a decrease in office visits than were IPA plans, irrespective of whether the payment structure of the IPA plan was fee-for-service or capitated. The Medicaid managed care evaluation in Ohio noted decreases in office visits for children and adults enrolled in managed care in most sites.

Another study examined utilization patterns in a voluntary Medicaid managed care program, the Children’s Medicaid Program, in Suffolk County, New York. Within the managed care program, one group of physicians was reimbursed under a capitated system, while the other group received fee-for-service payments at market-level rates that resembled those of an IPA plan. This study found that the switch from traditional fee-for-service Medicaid to capitated Medicaid managed care was not associated with a change in office visits, but that the switch to fee-for-service Medicaid managed care was associated with a significant increase in office visits. Patients in both managed care groups, but particularly those in the fee-for-service group, were more likely than patients in the traditional Medicaid group to be compliant with recommended guidelines for well-child care.

Overall, these findings do not demonstrate a consistent increase or decrease in childhood ambulatory office visits attributable to managed care, though distinct patterns of utilization by plan type do appear for different child populations. For privately insured children, enrollment in managed care was most likely to increase the use of ambulatory services when managed care was compared to a fee-for-service plan that did not cover ambulatory services or required patient copayments for these services. Thus, it is difficult to tell whether this observed difference is due to managed care arrangements per se, or simply the reduced cost sharing more often experienced among managed care enrollees.

For poor children covered by Medicaid and for whom cost sharing is not required, differences in ambulatory care use by plan type were usually associated with provider reimbursement mechanisms. Managed care arrangements using fee-for-service reimbursement and less restrictive managed care models were more likely to increase ambulatory primary care visits, while capitated reimbursements and more restrictive managed care arrangements, such as staff- or group-model HMOs, tended to decrease or have little effect on these services. Primary care visit rates by poor children enrolled in Medicaid usually have been found to be below recommended guide-
Utilization of Specialty Services

The effect of managed care arrangements is of particular concern for children with complex physical or emotional disorders, who may require expensive specialty services. Relatively healthy children, too, may require specialty services for acute conditions at various times throughout their development. Theoretically, primary care physicians who assume some degree of financial risk for the care of patients may face strong cost disincentives to refer children with complex needs to specialists, resulting in the inappropriate underutilization of such services.

For Privately Insured Children

One rigorous investigation specifically examined the effect of managed care on specialty utilization for privately insured children. In the Child Health Plus program in New York, the utilization of specialists increased dramatically for the entire group of previously uninsured children after enrollment in Child Health Plus, but there was no managed care effect on this overall increase in specialty care. It is likely that the addition of any health insurance coverage overshadowed any possible effect of managed care in specialty utilization.

A few other studies have explored referrals to specialty services for privately insured children under managed care, and results from these investigations have been mixed. A 1988 survey of more than 1,000 pediatricians reported fewer referrals to specialists and a higher likelihood of denied referrals in managed care than in fee-for-service plans, with greater perceived barriers in PPOs than in staff-model HMOs. In contrast, two studies of specialty referrals within IPA plans in Rochester, New York, found a higher rate of specialty referrals for children enrolled in IPA plans than for children enrolled in Blue Cross fee-for-service plans. It is important to note, however, that the financial incentives and fee-for-service payments within these IPAs represented relatively weak controls on specialty referrals.

Among chronically ill children, an analysis of the 1989 National Health Interview Survey found that although HMOs offered some advantages, including reduced cost sharing and improved availability of mental health, ancillary, and home care services, many HMOs also limited care by restricting the breadth of specialty services, the number of visits, and the choice of providers that were covered. A major determinant of access to and utilization of specialty services is coverage in the benefit package, which varies substantially among managed care plans. Other mechanisms implemented by managed care organizations to reduce the use of specialty services include financial, administrative, and educational strategies.

Under Medicaid Managed Care

There is considerably more information available about the use of specialists from studies that examined Medicaid managed care, though few recent studies exist. The evaluations of the Medicaid demonstrations consistently found reductions in the probability of visiting a specialist of about 30% to 50% among managed care enrollees as compared to fee-for-service enrollees (except in Missouri), and typically found that a greater proportion of visits occurred at the primary care office. Similarly, the Children’s Medicaid Program in Suffolk County, New York, found reduced non–primary care office visits in the capitated managed care group, although the fee-for-service managed care group and a comparison group both experienced increased specialty visits during the same time period. While lower specialty utilization among children may reflect reduced scattering of health care, it is possible that some of the specialty visits averted by Medicaid managed care may have been needed for children with complex health conditions.

For children with special needs, another way that managed care plans have limited the use of specialty care is by excluding from

Evaluations of the Medicaid demonstrations consistently found reductions in the probability of visiting a specialist of about 30% to 50% among managed care enrollees as compared to fee-for-service enrollees.
their benefit packages specific services that are critical for this population. In addition, Medicaid managed care plans have been noted to limit network providers and require prior authorization for out-of-plan referrals to specialists, thus reducing the use of necessary services for chronically ill and disabled children.

In summary, little research exists to draw sound conclusions about the effect of managed care arrangements on the use of specialty services by privately insured children. The few studies that do exist have mixed results, and any managed care effect observed appears to be influenced by the strength of cost incentives felt by providers or by children’s baseline health insurance status. In contrast, for poor children enrolled in Medicaid, findings of a negative effect of managed care on the use of specialty services are stronger, though whether this is attributable to managed care alone or to the degree of financial risk within different managed care plans cannot be drawn out using available data. Moreover, the effect that referrals to pediatric specialists have on the quality of health care for children has not been determined. Additional investigations are needed to evaluate health outcomes related to the use of specialty services and the process of specialty referrals to judge whether reductions of referrals in managed care settings are beneficial or harmful to disadvantaged children.

**Conclusion**

The bulk of research on the effect of managed care on access and utilization has focused on adults. Yet there are unique characteristics about child health care that highlight the importance of examining the effect of managed care on the health of this population specifically. An example characteristic is the critical role of prevention and ambulatory care for all children. In addition, it is particularly important to determine the effect of managed care on children with severe chronic physical or mental illnesses, and on the much larger population of poor children covered by Medicaid. Managed care has potential advantages and disadvantages with respect to the delivery of child health care, and its performance must be monitored carefully as the number of children enrolled in managed care plans continues to expand.

Studies of access to care for children have found mixed results for managed care. For privately insured children, managed care has had a consistent effect on some indicators of access to health services. However, potentially worrisome findings have been noted with regard to reduced access to needed specialty care for children with chronic conditions. For children covered by Medicaid, results from several evaluations in the 1980s found improved access to primary care services. Other studies, however, have documented inconsistent findings on indicators of access to care for pregnant women and children, which have varied by reimbursement mechanisms and across individual plans. In addition, there is a paucity of research from the recent wave of state Medicaid recipients enrolled in managed care. Concern has been noted about reduced access to specific specialty services for Medicaid recipients with chronic conditions. The impact of managed care depends to a large extent on baseline levels of care in the comparison indemnity population, and on changes in benefit packages by sponsors. Access to services usually has been worse for the Medicaid population than for privately insured children; thus, the potential positive impact of managed care is greater for Medicaid recipients. However, as baseline access to care improves, the potential improvement from managed care is reduced, and adverse effects may become more salient.

A number of studies have examined the effect of managed care on utilization of care by children. For privately insured children, there is little recent evidence that managed care reduces hospitalization rates or inpatient services, except for postpartum maternal and newborn hospitalizations, for which managed care has been noted to reduce lengths of stay. Similarly, for the population covered by Medicaid, there are scant
data supporting an effect of managed care on hospitalization rates, particularly after the effects of patient self-selection are eliminated. These results are in contrast to findings for the adult population, for whom managed care has been noted to reduce hospitalizations. It is likely that low baseline hospitalization rates for children reflect a general reluctance to hospitalize children unless absolutely necessary, thereby minimizing any potential effect of managed care.

While there are virtually no data on the effect of managed care on emergency department use for privately insured children, there is relatively good evidence that managed care has reduced ED visits for Medicaid recipients, and in many instances has reduced low-severity ED visits. This trend concerns many child health experts, because some evidence suggests there are dangers to denying pediatric ED care to high-risk children, who may suffer subsequent adverse health consequences.

Studies of ambulatory utilization have not found consistent effects of managed care on office visits, and any managed care effects observed depend in large part on the ambulatory coverage for the comparison group and the payment mechanism of the managed care group. When compared to groups having poor coverage for office visits, some studies have found that privately insured children enrolled in managed care plans have higher visit rates. For Medicaid recipients, managed care plans that pay providers on a capitated basis are more likely to decrease or have no effect on office visits, while those that pay providers on a fee-for-service basis are more likely to increase the use of ambulatory services. Managed care has not consistently improved utilization of preventive services for vulnerable children in Medicaid, and overall levels of preventive care remain lower than for privately insured children.

There is strong evidence for reduced use of specialty services resulting from managed care, particularly for children enrolled in Medicaid. In addition, there is some evidence for reduced coverage of high-cost specialized services for children with chronic illnesses enrolled in managed care plans.

Children are particularly vulnerable to inadequate access to and utilization of health services. Findings pertaining to adults often have not been observed for children, and findings specific to early evaluations of managed care may not apply to newer managed care arrangements implemented in a rapidly changing health care environment. Moreover, there is little evidence of the appropriateness of health care services used by children in managed care settings. It is, therefore, critical during the next decade to continue to monitor the effect of managed care on access to and utilization of services by children, as well as to evaluate its effect on quality of care and child health outcomes.
### Table A1

#### Summary of Access and Utilization of Health Services for Children and Families by Type of Health Plan

<table>
<thead>
<tr>
<th>Health Plan Comparison(^a)</th>
<th>Indicator</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Access for Privately Insured</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MC(^b) vs. FFS(^c,28,38)</td>
<td>Preventive health/office visits</td>
<td>Increased in HMO(^d) if copay in FFS; otherwise little effect</td>
</tr>
<tr>
<td>HMO/PPO(^e) vs. FFS(^24,35)</td>
<td>Satisfaction with access</td>
<td>Lower in HMO/PPO</td>
</tr>
<tr>
<td>HMO vs. PPO/FFS(^37)</td>
<td>Unmet health care needs; difficulty getting appointment; overall visit rates</td>
<td>Greater in HMO</td>
</tr>
</tbody>
</table>

**Summary:** Access to preventive health visits may increase under managed care if cost sharing is required in fee-for-service plans. Managed care generally fares worse on other indicators of access, including satisfaction, unmet health needs, and difficulty scheduling appointments.

<table>
<thead>
<tr>
<th><strong>Access Under Medicaid Managed Care</strong></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MC vs. FFS(^40)</td>
<td>Usual source of care</td>
<td>Improved in MC</td>
</tr>
<tr>
<td></td>
<td>Availability of sick child care</td>
<td>Worse in MC</td>
</tr>
<tr>
<td>MC vs. FFS(^46)</td>
<td>Usual source of care; continuity of care; regular provider for urgent/after-hours care; waiting times</td>
<td>Improved in MC</td>
</tr>
<tr>
<td>MC vs. FFS(^42)</td>
<td>Any primary care visit</td>
<td>Decreased in MC if capitated payment; no difference if FFS payment in MC</td>
</tr>
<tr>
<td>MC vs. FFS(^26)</td>
<td>Any physician visit</td>
<td>Decreased in MC</td>
</tr>
<tr>
<td>MC vs. FFS(^43-45)</td>
<td>Prenatal visits</td>
<td>No consistent effect</td>
</tr>
<tr>
<td>MC vs. FFS(^47,48)</td>
<td>Satisfaction with quality of care; availability of care; physician choice</td>
<td>Higher in MC</td>
</tr>
</tbody>
</table>

**Summary:** Numerous indicators of access are better under Medicaid managed care, including having a usual source of care, continuity of care, shorter waiting times, satisfaction with quality of care, and provider choice. However, there is some evidence that Medicaid managed care may decrease or have no impact on availability of primary care visits for children and pregnant women.

<table>
<thead>
<tr>
<th><strong>Hospital Utilization for Privately Insured</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MC vs. FFS(^57)</td>
<td>Postpartum length of stay</td>
<td>Usually shorter in MC</td>
</tr>
<tr>
<td>HMO vs. FFS(^38)</td>
<td>Hospitalization rate</td>
<td>Lower in HMO if no copay in FFS; otherwise no difference</td>
</tr>
<tr>
<td>IPA(^f) vs. FFS(^28)</td>
<td>Hospitalization rate</td>
<td>No difference</td>
</tr>
</tbody>
</table>

**Summary:** Little evidence of any managed care effect for children. Some evidence that managed care is associated with shorter postpartum hospital stays.

\(^a\) See the related endnotes following this article for the complete citation of a publication in which the relevant study is described and/or discussed.

\(^b\) MC = managed care plan, type unspecified

\(^c\) FFS = fee-for-service plan

\(^d\) HMO = health maintenance organization, type unspecified

\(^e\) PPO = preferred provider organization

\(^f\) IPA = independent practice association
Table A1 (continued)

<table>
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<tr>
<th>Health Plan Comparison</th>
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<tr>
<td>Hospital Utilization Under Medicaid Managed Care</td>
<td>Hospitalization rate</td>
<td>No consistent effect</td>
</tr>
<tr>
<td>MC vs. FFS&lt;sup&gt;19,47,58&lt;/sup&gt;</td>
<td>Hospitalization rate</td>
<td>Lower if voluntary MC enrollment; no difference if mandatory MC enrollment</td>
</tr>
<tr>
<td>MC vs. FFS&lt;sup&gt;26&lt;/sup&gt;</td>
<td>Hospitalization rate; resource utilization; costs</td>
<td>No difference</td>
</tr>
<tr>
<td>HMO vs. FFS&lt;sup&gt;26&lt;/sup&gt;</td>
<td></td>
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Summary: Little evidence of any managed care effect.

| Emergency Department Utilization for Privately Insured | | |
| No Studies | | |

| Emergency Department Utilization Under Medicaid Managed Care | Emergency department (ED) visits | Lower in MC |
| MC vs. FFS<sup>19,60–62</sup> | Severity of ED visits | Higher in MC |
| MC vs. FFS<sup>62</sup> | ED visits | No difference |
| HMO vs. FFS<sup>25</sup> | | |

Summary: Fewer emergency department visits and increased severity of visits associated with Medicaid managed care.

| Primary Care Ambulatory Utilization for Privately Insured | Office/preventive visits | Increased in HMO |
| HMO vs. FFS<sup>11</sup> | Office/preventive visits | Increased in HMO if copay in FFS; otherwise little effect |
| HMO vs. FFS<sup>38</sup> | Preventive, acute, chronic illness, after-hours, and weekend visits; lab evaluations; specialty referrals | Increased in IPA compared to FFS with copay |
| IPA vs. FFS<sup>28</sup> | Office visits | Increased in MC or no effect |
| IPA vs. FFS<sup>28</sup> | Ambulatory visits | No change |
| MC vs. FFS<sup>13,53</sup> | | |
| MC vs. FFS<sup>65</sup> | | |

Summary: Some evidence of increased visits associated with managed care when cost sharing for these services is required in the comparison fee-for-service plan.

<sup>a</sup> See the related endnotes following this article for the complete citation of a publication in which the relevant study is described and/or discussed.

<sup>b</sup> MC = managed care plan, type unspecified

<sup>c</sup> FFS = fee-for-service plan

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<td><strong>Primary Care Ambulatory Utilization Under Medicaid Managed Care</strong></td>
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</tr>
<tr>
<td>MC vs. FFS(^{56,61})</td>
<td>Office visits</td>
<td>Increased in MC if FFS payment; decreased in MC or no effect if capitated payment</td>
</tr>
<tr>
<td>MC vs. FFS(^{56})</td>
<td>Office visits</td>
<td>Usually decreased in MC</td>
</tr>
<tr>
<td>HMO vs. FFS(^{25})</td>
<td>Office visits; costs</td>
<td>Decreased in HMO</td>
</tr>
<tr>
<td><strong>Summary:</strong> Findings mixed. Managed care most likely to increase probability of visits if reimbursement method is fee-for-service. Managed care most likely to lower probability of visits or have no effect if reimbursement method is capitation.</td>
<td></td>
<td></td>
</tr>
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</table>

| **Specialist Utilization for Privately Insured** | | |
| MC vs. FFS\(^{55}\) | Visits to specialists | No change |
| MC vs. FFS\(^{58}\) | Specialty referrals | Lower in MC |
| Denied referrals | Higher in MC |
| IPA vs. FFS\(^{14,28}\) | Specialty referrals | Higher in IPA |
| HMO vs. FFS\(^{16}\) | Coverage for breadth of services; number of visits; choice of providers | Restricted in HMO |
| HMO vs. FFS\(^{16}\) | Availability of mental health, ancillary, home health services for children with special needs | Better in HMO |
| **Summary:** No consistent difference in referrals and service use. Some evidence for restricted coverage under managed care for chronically ill children. |

| **Specialist Utilization Under Medicaid Managed Care** | | |
| MC vs. FFS\(^{26,42,58}\) | Visits to specialists | Lower in MC |
| MC vs. FFS\(^{91}\) | Non–primary care office visits | Lower in MC if capitated payment |
| MC vs. FFS\(^{15,16,49,50}\) | Coverage for breadth of services; limit network providers; require preauthorization for out-of-plan specialty referrals | Restricted in HMO |
| **Summary:** Evidence for decreased use of specialty services and restricted coverage under managed care. |

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\(^{a}\) See the related endnotes following this article for the complete citation of a publication in which the relevant study is described and/or discussed.

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8. For example, on December 13, 1993, the New York State Assembly amended the insurance law to cover preventive and primary care services to dependent children and adolescents.
10. See the National Committee for Quality Assurance’s Health Plan Employer Data and Information Set (HEDIS 2.5) for use in managed care plans. Available from the National Committee for Quality Assurance Publications Center, P.O. Box 533, Annapolis Junction, MD 20701-0533.


