ABSTRACT. Academic general pediatric divisions can function as effective primary care providers in a managed care environment. Residents training in these programs are expected to be better equipped to enter a work environment that is increasingly structured in a managed care format. Positive and negative consequences of managed care in an academic setting are discussed. Recommendations for successful implementation of resident training in the world of managed care are shared. Pediatrics 1998;101:775–778; managed care, general pediatric teaching clinics.

ABBREVIATIONS. PCPs, primary care providers; KenPAC, Kentucky Patient Access and Care (program); ED, emergency department.

Leaders of academic medical departments who are considering participation in managed care plans have few data or road maps to guide them. The potential costs and other implications of teaching in various managed care settings are the subject of current debate, confusion, and anxiety. Some departments have chosen to work with managed care plans as primary care providers (PCPs) to diversify learning experiences or to ensure a sufficiently large patient population for teaching and an adequate market share for revenue. However, health plans traditionally have viewed academic centers as high-cost providers. Few authors have addressed the strengths and challenges of designating pediatric residents and supervising faculty as academic primary care providers in these emerging systems. This report describes the experience of a general pediatric section that has integrated a form of managed care successfully into its resident training practice for more than 10 years.

SETTING

The Division of General Pediatrics at the University of Louisville, KY, conducts a pediatric practice designed as a model of private pediatric practice in the surrounding community. This academic practice occupies a free-standing office of 8000 square feet located 1½ blocks from the teaching hospital. It is in an inner city location and primarily serves the local population.

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The practice has ~6000 registered patients who have active charts, including ~3900 Medicaid recipients under the Kentucky Patient Access and Care (KenPAC) program. KenPAC is the payer for 85% to 90% of the practice’s 14,000 annual patient encounters. The remaining 10% to 15% are covered by commercial private insurance or by private payment according to a sliding fee scale.

THE KENPAC PROGRAM

In January 1986, the Commonwealth of Kentucky adopted a statewide managed care Medicaid program, KenPAC, under federal waiver (HCFA 1915[b] "freedom of choice waiver"). The federal Health Care Financing Administration required comprehensive evaluations by independent observers at 2-year intervals. In each of these, KenPAC was determined to be meeting objectives regarding provider and recipient satisfaction, as well as cost savings.

From its inception, KenPAC has featured compulsory recipient and provider participation. Freedom of choice is interpreted to mean that recipients can select a PCP from all participating primary care providers. The designated PCP is required to provide or authorize all medical services, maintain 24-hour phone availability, and comply with the approved drug formulary. Provider reimbursement is fee-for-service plus a monthly management fee per enrollee paid to providers. Recipients can change PCPs only by submitting a formal request. KenPAC is administered by the Kentucky Department of Medicaid Services in the Cabinet for Human Resources. No commercial managed care organizations are involved. Recipient assignment, utilization monitoring and reporting, and quality assurance are accomplished by the responsible state agency. Resource utilization is monitored through claims data and reported monthly to all providers.

Concern that an academic general pediatric practice might overutilize resources stimulated the structured observations described below. From the initiation of KenPAC, careful scrutiny by the general pediatric faculty of resident practice habits, and strict
monitoring of resource utilization were maintained. Residents were required to justify management decisions prospectively, including pharmaceutical selections, laboratory tests, diagnostic procedures, subspecialty referrals, emergency department (ED) referrals, and hospital admissions. Logs of cumulative resident performance regarding prescriptions filled, laboratory tests, procedures completed, subspecialty referrals, ED use, and hospital admissions were maintained and reviewed monthly. Inappropriate utilization of resources was addressed in attending-resident exchange during each case presentation. Residents were not coerced into strict patterns of patient management but were expected to justify independent choices.

**OBSERVATIONS**

The cumulative practice experience with KenPAC of the model practice has been monitored for >1 decade. Broad categories of Physician Services, Prescriptions and Procedures, and Hospital Services were recorded for several years. Comparison with all 135 general pediatricians in Kentucky who are KenPAC providers has been reported.6 Some of these data are shown in the Table. The average monthly utilization of selected markers of resource utilization aggregated from claims data by KenPAC for fiscal year 1991 are depicted. These data represent average monthly utilization for 12 consecutive months per 100 KenPAC enrollees. The prescribing rate per enrollee for residents in training was ~50% of that for community pediatricians. The academic-based practice generated a slightly higher frequency of laboratory and radiologic procedures (10.77 vs 10.65 per 100 enrollees per month). By a wide margin, the community pediatricians initiated more subspecialty referrals (20.90 vs 11.12 per 100 enrollees per month).

Hospital services were monitored by recording ED encounters and hospital admissions. Children were referred for ED evaluation and treatment at 6.62 ED encounters per 100 enrollees per month by the academic practice, whereas community physicians referred patients to the ED at 7.83 encounters per 100 enrollees per month. From the resident training practice were admitted to hospital at 52% of the admission rate of community pediatricians. Enrollees of the model practice had fewer office visits on average than those of community practices. Despite generally lower utilization rates, average medical costs per enrollee per month for the academic practice ($50.17) exceeded the community expenditure ($48.10) by $2.06 per enrollee per month because of pricing differences.

**DISCUSSION**

As indicated in the Table, the residents’ practice activities resulted in consumption of fewer medical resources except for the category of laboratory and radiologic procedures. For the categories of prescriptions filled, referrals, authorized ED visits, and hospital admissions, resident physicians were responsible for a lower rate of resource consumption per enrollee. These lower versus higher comparative positions in utilization held, whether calculated per enrollee or per PCP encounter, for all categories except ED visits.6 For ED visits, use rate for the resident practice was slightly lower per enrollee than for community practices, and slightly higher per PCP visit (32 vs 26 per 100 encounters, respectively).

The rate of PCP visits per enrollee for the resident practice (2.49 per year) approximated the 1990 US annual physician visit rate of 2.52 for children 0 to 21 years of age,7 and was lower than that for KenPAC community practices (3.61) per year. The available data do not permit additional analysis or conclusions to be drawn about an ideal PCP visit rate. These rates can vary because of barriers to access (which we addressed with 24-hour coverage and same-day availability of appointments), age distribution (average four visits per year in the United States for 0- to 5-year-old children vs 1.5 visits per year for 6- to 10-year-old children), patient chronicity and diagnostic mix, urban versus rural differences, or provider preference. Overall, children in managed care tend to make greater use of preventive services and have more frequent ambulatory visits than those in fee-for-service arrangements.6,7

Average cost per enrollee per month was slightly greater in the academic practice, despite decreased utilization of most measured components. Purchase of these medical commodities in the expensive marketplace of the teaching hospital produced this paradoxical outcome. Community pediatricians were free to use less costly sources such as smaller, less comprehensive general community hospitals with significantly lower per diem charges, competitive community-based laboratory and radiologic suppliers, and subspecialists (pediatric and/or adult) located in markets with lower overhead costs.

### TABLE. Resource Utilization of Pediatric Residents Versus Community Pediatricians

<table>
<thead>
<tr>
<th></th>
<th>Resident</th>
<th>Community</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Per 100 KenPAC enrollees per month)</td>
<td></td>
</tr>
<tr>
<td>Prescriptions filled</td>
<td>25.74</td>
<td>52.30</td>
</tr>
<tr>
<td>Procedures (laboratory and x-ray)</td>
<td>10.77</td>
<td>10.65</td>
</tr>
<tr>
<td>Subspecialty physician referrals</td>
<td>11.12</td>
<td>20.90</td>
</tr>
<tr>
<td>Emergency department visits</td>
<td>6.62</td>
<td>7.83</td>
</tr>
<tr>
<td>Hospital admissions</td>
<td>0.51</td>
<td>0.99</td>
</tr>
<tr>
<td>PCP visits</td>
<td>20.79</td>
<td>30.05</td>
</tr>
<tr>
<td>Average costs per enrollee per month</td>
<td>$50.17</td>
<td>$48.11</td>
</tr>
</tbody>
</table>

Data Source KenPAC claims records, July 1, 1990 to June 30, 1991.
a Forty-one pediatric residents, 2760 average monthly KenPAC enrollees.
b One hundred thirty-five community pediatricians, 269 mean KenPAC enrollees per practice, range (<100–>3000).
Medicaid recipient assignment to a specific PCP transformed an unpredictable and variable practice into a stable practice. Provision of a medical home for these Medicaid recipients has virtually eliminated the use of multiple sources of health care. This fundamental alteration in the practice environment of an academic pediatric practice has been observed to impact both positively and negatively. Although difficult to quantify, some perceptions of the impact of managed care on the academic environment are listed below.

Positive consequences include:

1. Assignment of patients to a medical home fosters continuity, trust, and quality health care. Long-term commitment of physicians and recipients promotes rapport and cooperation among all parties.
2. A more stable patient pool enhances continuity clinics. The KenPAC program restricts patient access to the medical home, increasing resident-patient interaction that nurtures experiential learning.
3. An assigned population of patients promotes predictable demand for services and allows for accurate staffing projections.
4. A recipient pool restricted to care provided by or authorized by the assigned PCP enhances longitudinal clinical research activities. Patients enrolled in clinical protocols seldom are lost from studies.
5. Being clearly identified as the responsible PCP engenders respect from subspecialty colleagues. We have reported increased formal consultant response rate for our assigned KenPAC patient population. Having a readily identified PCP helps consultants direct their recommendations.
6. Resident decision-making, rapport with patients and families, case management skills, and resource utilization can be tracked efficiently. Resident accountability is improved under appropriate faculty scrutiny. Recipients with a specific medical home return for follow-up to the assigned provider, thereby increasing opportunities for the resident to evaluate the outcomes of resident decision-making in the real world of patient care.

Risks or negative consequences include:

1. Although not demonstrated here, academic providers may be particularly vulnerable to adverse selection of recipients with chronic diseases and conditions because of ties to tertiary care. Accumulation of large numbers of recipients with serious diseases and chronic conditions would be expected to require utilization of more medical resources, necessitating financial adjustment for patient mix.
2. The possibility of abrupt alteration of the health plan by the state Medicaid agency remains, making long-term planning difficult.
3. Although this experience suggests that academic general pediatric divisions may be able to compete favorably in the managed care marketplace, some pediatric subspecialty sections may experience significantly decreased utilization. Such was the experience reported previously for the pediatric ED in this academic community.

**SUGGESTIONS FOR SUCCESS**

Suggestions are listed below for structuring an academic general pediatric office practice for the efficient delivery of health care in a managed care environment while training of pediatric house officers to be well versed in managed care.

1. If at all possible, the practice should be located in a free-standing office physically removed from the hospital. This change assists residents in their adjustment to the unfamiliar culture of primary care. All ancillary staff should be employees of the practice and responsible to the medical director of the general pediatric practice.
2. Instituting both morning and afternoon continuity clinic schedules provides for efficient use of the office plant. Because expensive examination rooms cannot be left idle for significant portions of the day, the continuity practice experience must be the priority assignment for all residents. Concurrent operation of a general pediatric block rotation helps to accommodate patients who walk in, call in, are unassigned, or need after-hour telephone management.
3. A new patient panel should be assembled for each new house officer. Simply assuming the practice of a graduating resident may result in a list of names that one may never encounter. Because patients are scheduled into appointment slots, each new resident has an opportunity to become acquainted with every patient and family in his or her panel.
4. Information management designed to provide resident specific data can promote awareness of managed care and assist faculty supervision.

**CONCLUSIONS**

In >1 decade of experience in operating a general pediatric academic practice as a managed care provider, we have observed that pediatric residents adapt rapidly to the managed care environment. Given the responsibility and authority to function as both providers and managers of health-related resources, residents demonstrate the ability to become efficient primary care providers. The necessity of justifying management decisions promotes clear thinking as well as an awareness of relative costs of health-related services. Tensions regarding the sometimes conflicting roles of child advocate versus gatekeeper are recognized and discussed. A locked-in panel of patients promotes physician-patient/family rapport. The participating resident physician can follow management outcomes.

With careful selection and preparation, general pediatric sections/divisions can enter into managed care contracts. When such contracts are structured adequately for community-based general pediatricians, appropriately supervised resident clinics may be able to compete successfully with community pediatricians for market share and revenue. General pediatric faculty
supervising residents in a managed care environment can maintain service productivity. Managed care arrangements can strengthen the continuity clinic experience. Teaching hospitals can and should develop cost-competitive programs and services designed to assist primary care divisions competing in managed care plans.

REFERENCES

COMMENTARY

General Pediatric Teaching Clinics and Managed Care, by J. Thomas Badgett, MD, PhD

They said it couldn’t be done—but could it? In this article, Dr Thomas Badgett certainly believes it is possible for pediatric residents in continuity practice settings to compete successfully in an environment of managed care. On the other hand, managed care companies may look at his institution’s bottom line and see that average costs per enrollee per month still are higher in a residency training practice environment and decide to move their business elsewhere. Both Dr Badgett and managed care companies need to recognize that neither perspective will be viewed by the other side as viable or as credible without a partnership. A partnership between managed care and academic medical centers requires advocacy on the part of both parties to see that a future generation of physicians is well trained to understand the importance of cost-effective quality care.

Academic medicine programs such as those supervised by Dr Badgett need to provide residents with a knowledge base in health care economics. They also need to convince managed care payers that increased cost per patient is a function of institutional costs that should not be attributed directly to a resident in a primary care setting responsible for the care of a patient. In fact, residents should begin to understand where in their academic medical center the health care costs are high so that the blame does not fall on them. They can then work with their institution and managed care companies to reduce such institutional costs.

Managed care organizations need to realize that it is not the residents’ fault that the cost per patient is as high as it is in the academic medical center. These companies need to work with the faculty in those centers to teach residents how to reduce those institutional costs, even if they are not related directly to the care of their specific patients. In fact, gaining an understanding of the higher costs related to medical care in academic medical centers (vs community hospitals without residents) is currently just as important for residents as their being able to manage patients effectively.

Dr Badgett is to be congratulated for proving that residents can compete, but he now must convince those residents that a partnership with managed care is far better than a competition, and that programs such as his are in a critical position to help payers understand how an investment in residents is an investment in the future of managed care as well. Although Dr Badgett has shown us that it can be done, he has not demonstrated all the tools needed for his residents to go forward with the knowledge to understand how they can control other managed care environments rather than have these environments control them. Practicing in a managed care continuity practice during residency is one thing. Learning the knowledge, skills, and attitudes during training to survive in the real world of managed care after residency is another. Dr Badgett’s program is certainly a good start to ensuring such survival!

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