Primary Care Pediatricians' Satisfaction with Subspecialty Care, Perceived Supply, and Barriers to Care

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Objectives To compare satisfaction with specialty care by primary care pediatricians (PCPs), perceived barriers to care, and adequacy of specialist supply.

Study design A survey of U.S. pediatricians was conducted in 2007. PCPs were asked about satisfaction with specialty care for their patients, as well as supply of specific pediatric subspecialists. Responses of rural and nonrural PCPs were compared regarding 10 potential barriers to care.

Results Most PCPs are satisfied with the quality of subspecialty care. However, they were not satisfied with wait times for appointments, and the availability of many pediatric medical subspecialties and several pediatric surgical specialties. Rural PCPs were significantly more likely to report these shortages compared with nonrural pediatricians; these included 9 of the 18 medical and 5 of the 7 surgical specialties. In addition to wait times for appointments, PCPs reported that subspecialists' nonparticipation in health insurance plans and lack of acceptance of uninsured patients were also barriers to obtaining subspecialty care for their patients.

Conclusions PCPs provide valuable insight into access to the pediatric subspecialty workforce. This survey of PCPs raises significant concerns about the adequacy of children's access to pediatric subspecialists, especially in rural communities. *(J Pediatr 2010;156:1011-5)*.

Approximately 2.3% of visits to a primary care pediatrician's (PCP's) office result in a referral to a subspecialist.[1] The availability of pediatric medical and surgical subspecialists affects the PCPs' ability to provide optimal care for their patients. Many previous studies of PCPs' satisfaction with specialty care have been limited in their scope, focusing on satisfaction with care for a specific condition[2] or subspecialty.[3-6] Others, such as the 2000 AAP Future of Pediatric Education II report on pediatric subspecialty care, have approached the issue of subspecialist supply from the perspective of the subspecialist.[7] Most respondents to the Future of Pediatric Education II report stated there was no need for additional providers like themselves in their community, but the study failed to consider the perspective of PCPs in various office settings. As a common access point for subspecialty care for children, PCPs' perspectives on subspecialty quality of care and availability are therefore highly relevant. For specialists working primarily in academic medical centers or large group practices in urban settings, it may be difficult to envision specialist care from the point of view of a PCP, especially one practicing in a rural area. The perspectives of PCPs may also not be homogenous, given differing practice settings and patient populations. The subspecialty needs of children and their pediatricians may differ drastically when comparing an urban, academic pediatric practice to a large suburban group practice or a solo rural practice. For example, geographic barriers to specialty care have been shown to result in less than optimal outcomes for children with appendicitis who reside in rural versus urban communities.[8] Children living in rural or small metropolitan areas with geographic barriers to specialty care are further disadvantaged by higher concentrations of poverty.[9] Each of these factors may significantly influence referral practices, thereby impacting perceptions about subspecialist access and quality. We undertook this national study to evaluate general pediatricians' satisfaction with subspecialty referrals, perceived barriers to subspecialty care, and perceived adequacy of the pediatric subspecialist supply by practice location.

Methods

The American Academy of Pediatrics (AAP) Periodic Survey of Fellows (a cross-sectional survey of nonretired, U.S. members of the AAP), was used to collect information on PCPs' experiences with subspecialty referrals in 2007 (Periodic Survey 67). Content for the survey was developed in collaboration with the AAP Committee on Pediatric Workforce. The survey was pilot tested and approved by the AAP Institutional Review Board. The survey was 8 pages in length and was mailed to 1605 AAP members between March and August. A total of 56% of those surveyed responded after up to 7 mailings. Re-

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PCP	Primary care pediatrician

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Table I. Characteristics of primary care pediatrician respondents by practice location

Characteristic	Total (n = 595)	Nonrural (n = 519)	Rural (n = 76)
Sex (%)			
Male	44	43.5	47.4
Female	56	56.5	52.6
Age (Mean yrs)	48.3	48.3	47.9
Race/ethnicity			
White	75.5	75.3	76.3
Hispanic	4.6	4.9	2.6
African American	5.9	6.0	5.3
Asian	14.4	14.4	14.5
American Indian	.3	0	2.6
Other	1.2	1.2	1.3
Practice type:			
Solo or 2-physician	19.6	18.9	24.6*
Group	62.7	63.1	59.4
Hospital-based	14.5	15.6	5.8
Other	3.3	2.3	10.1
Patient visits per typical week (mean)	104.7	103.5	112.3
Hours worked per typical week (mean)	46.2	45.7	49.2

*Difference between pediatricians from rural and non-rural areas significant at $P < .05$.

spondents to the survey were older than nonrespondents (49 years versus 47 years, $P = .004$); there was no sex difference. Analyses were limited to 597 pediatricians (66% of respondents) who reported providing primary care and who provided their practice locations (rural, suburban, urban inner-city, or urban not inner-city). The number of cases for each analysis varied slightly on the basis of missing responses for specific questions.

Questionnaire Design

In addition to information on physician demographics and practice characteristics, survey participants who provided primary care were asked a series of questions regarding satisfaction with subspecialty care provided, availability of subspecialists, and perceived barriers to subspecialty care. PCP satisfaction included those who reported they were either "moderately satisfied" or "completely satisfied, could not be better" with the subspecialty care children in their practice receive. Other choices included "somewhat satisfied," "neither dissatisfied nor satisfied," "somewhat dissatisfied," "moderately dissatisfied," and "completely dissatisfied, could not be worse." PCPs also rated whether their experiences with the wait times or number of subspecialists were "poor" or "fair" rather than "good," "very good," or "excellent." For the local availability of 18 pediatric medical subspecialties and 7 pediatric surgical specialties, PCPs reported whether there were "too few" providers to meet the needs of the patients in their practice versus "just right" or "too many." Finally, barriers to pediatric subspecialty care were measured on the basis of whether a PCP rated the factor as "a moderate barrier" or "a significant barrier," compared with "somewhat a barrier" or "not at all a barrier."

Data Analysis

For all analyses, the experiences of PCPs from rural areas were compared with PCPs from nonrural (urban inner-city, urban non-inner city, and suburban) areas. Bivariate comparisons were conducted with χ^2 tests for categorical variables and t tests for continuous variables. A P value $<.05$ was considered statistically significant.

Table II. Percent of primary care pediatricians reporting too few medical subspecialists to meet the needs of patients in their practice by medical subspecialty type and practice location

Medical Specialty	Total (n = 590)	Non-rural (n = 514)	Rural (n = 76)
Child/adolescent psychiatry	95.8	95.1	100.0*
Developmental-behavioral pediatrics	86.6	85.9	92.0
Pediatric dermatology	81.6	80.5	89.3
Pediatric rheumatology	68.2	67.3	74.0
Pediatric neurology	66.7	66.1	70.7
Adolescent health	64.2	64.2	64.9
Pediatric endocrinology	58.8	57.2	69.3*
Pediatric gastroenterology	54.5	53.8	59.2
Pediatric emergency medicine	49.2	46.4	68.4*
Pediatric nephrology	48.1	46.2	61.3*
Pediatric genetics	45.1	45.1	44.7
Pediatric pulmonology	41.7	40.2	52.0*
Pediatric infectious disease	36.1	34.4	47.4*
Pediatric allergy and immunology	33.0	31.8	41.3
Pediatric intensive care	23.9	21.7	38.2*
Pediatric hematology and oncology	20.8	19.5	28.9
Pediatric cardiology	17.3	15.9	26.3*
Neonatology	5.5	4.3	13.2*

*Difference between pediatricians from rural and non-rural areas significant at $P < .05$.

Results

Demographic and Practice Characteristics

The demographic and practice characteristics of PCPs responding to the survey are presented in Table I. Practice location was divided into 2 categories, rural and nonrural. The demographic characteristics of the 2 groups were similar. The practice characteristics of the 2 groups were also similar except that a larger percentage PCPs practicing in rural locations were in solo or 2-physician practices compared with PCPs practicing in nonrural locations.

Satisfaction with Subspecialty Care

Although 73.1% of nonrural PCPs were moderately or completely satisfied, only 54.0% of rural pediatricians rated satisfaction this way (difference significant at $P \leq .05$) (Figure 1; available at http://www.jpeds.com). PCPs were asked to rate their experiences in the past 12 months with waiting time to see subspecialists; and the number of subspecialists who care for children in their area (Figure 2; available at http://www.jpeds.com). Overall, 68% of rural PCPs and 49% of nonrural PCPs were dissatisfied with waiting times for appointments (difference between settings significant at $P = .002$); more than 65% of rural and only 19% of nonrural PCPs rated the number of subspecialists in their area as poor or fair (difference significant at $P \leq .001$).