The Future of Pediatric Education II
A Project of the Pediatric Community

Summary of Survey Findings:
Pediatric Endocrinology

Sponsoring Organizations:

American Academy of Pediatrics
American Board of Pediatrics Foundation
American Medical School Pediatric Department Chairmen
Center for the Future of Children of The David and Lucile Packard Foundation
Project #MCJ379381 from the Maternal and Child Health Bureau

Introduction

The FUTURE OF PEDIATRIC EDUCATION II (FOPE II) Project is a 3 year, grant-funded initiative launched by the pediatric community in May 1996. As part of this project, key leaders in the pediatric community are addressing the future supply and training of pediatricians and the provision of pediatric care into the next millennium. They are continuing the work begun with a 1978 report entitled: "The Future of Pediatric Education."

The new report, scheduled for completion in 1999, will contain recommendations that will shape the lifelong learning process of pediatricians. Looking beyond the pediatric workforce and training of pediatricians, the recommendations encompassed in the 1999 report will also address the role and pediatric training of nonpediatricians, the financing of graduate medical education, and primary care and subspecialty issues.

The FOPE II Project consists of a 17-member Task Force that has ultimate responsibility for the development of the final report. Operating under the auspices of the Task Force are five, topic-specific workgroups:

- Pediatric Workforce Workgroup
- Pediatric Generalists of the Future Workgroup
- Pediatric Subspecialists of the Future Workgroup
- Financing GME Workgroup
- Education of the Pediatrician Workgroup

Each workgroup will provide an in-depth analysis of key issues under their purview. The workgroups are charged with generating a report that will, to the extent possible, include data-driven conclusions and recommendations for the optimal provision of pediatric care to all infants, children, adolescents, and young adults.

An important component of the FOPE II Project has been the gathering of insights, information, and data that will inform the deliberations of the workgroups and the Task Force. A number of venues are being used both to provide and solicit information. One opportunity is the Survey of the American Academy of Pediatrics (AAP) Medical and Surgical Subspecialty Sections. Seventeen AAP medical and surgical subspecialty sections have chosen to participate in this survey process. Several additional sections have provided the data and information that they acquired from independent survey initiatives.

The Survey of AAP Medical and Surgical Subspecialty Sections solicits information about career, education, and practice issues, as well as demographic information. The surveys have been sent to members of the AAP Section, as well as members of the appropriate subspecialty organizations, as identified by the Section. This report summarizes the findings from the surveys of physicians in pediatric endocrinology.

Methodology

This report is based on responses that were generated from the Workforce Survey for Child Health Care, which was developed by the FOPE II Task force and was designed to be applicable to most pediatric surgical and medical specialists. Because most pediatric endocrinologists had been surveyed recently by the Lawson Wilkins Pediatric Endocrine Society (LWPES), this project surveyed pediatric endocrinologists using only the standard questionnaire and did not develop a subspecialty-specific questionnaire.

Mailing lists were compiled of physicians to whom the survey would be mailed. Included were all 286 members of the AAP's Section on Endocrinology (Section), the 685 physicians who have been sub-board certified in pediatric endocrinology by the American Board of Pediatrics (ABP), and the 677 US members of LWPES.

Five mailings of the survey went out between December 1997 and October 1998 (the lengthy fielding was due to late addition of LWPES physicians to the mailing) to a total of 897 physicians. There was some overlap among the three mailing lists: 38% of the sample were sub-board certified in pediatric endocrinology by ABP and also belonged to LWPES and 20% of the sample were sub-board certified in pediatric endocrinology by ABP, belonged to LWPES, and belonged to the Section.

Each mailing contained the Workforce Survey for Child Health Care, a cover letter emphasizing the importance of the survey, and a return envelope. The survey had an effective sample size of 787 and a response rate of 69.5 % (547 out of 787).

The response rate varied by membership. Physicians most likely to respond were those who belonged to the Section and who were sub-board certified in pediatric endocrinology by ABP (79% response rate), followed closely by those who belonged to the Section, were sub-board certified in pediatric endocrinology by ABP, and belonged to LWPES (78% response rate). Least likely to respond were those physicians who only belonged to LWPES and not the Section, and who were not sub-board certified in pediatric endocrinology by ABP (27% response rate).

Acknowledgments

THE FUTURE OF PEDIATRIC EDUCATION II (FOPE II) Project acknowledges the participation of all who facilitated the development and implementation of the Workforce Survey for Child Health Care and this report on the survey findings. The FOPE II Project Task Force and Workgroup members provided the overall framework for the surveys of pediatric medical and surgical subspecialists and those non-pediatrician physicians who provide pediatric care. Of particular note are Sarah E. Brotherton, PhD, and Judy Karacic of the AAP Department of Research worked diligently on construction of the survey instrument, fielding the survey, and analysis of the results. Thomas M. Gorey, JD, of Policy Planning Associates, wrote the final report. Angela Lipinski, AAP Department of Education, handled all aspects of the production and distribution of this report. The FOPE II Project extends grateful thanks to the many individuals who took time from their busy schedules to complete and return the survey. The participation of these respondents has informed the deliberations of THE FUTURE OF PEDIATRIC EDUCATION II Project.

The Future of Pediatric Education II Project is made possible through the support of the following sponsoring organizations: American Academy of Pediatrics, American Board of Pediatrics Foundation, Association of Medical School Pediatric Department Chairmen, Center for the Future of Children of The David and Lucile Packard Foundation, and Project #MCJ379381 from the Maternal and Child Health Bureau.

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Workforce Survey for Child Health Care

Demographics of Respondents

On average, the respondents were 50 years of age and said they planned to retire fully from the practice of medicine at age 66. One-third plan to retire within the next 10 years. Sixty four percent (64%) of the respondents were male and 36% were female. In terms of ethnicity, 82% were White/Non-Hispanic; 7%, Asian/Pacific Islander; 6%, White/Hispanic; 2%, African American; and 4%, other racial or ethnic groups.

Seventy eight percent (78%) of the respondents were graduates of U.S. medical schools, 2% were graduates of Canadian medical schools, and 19% were graduates of medical schools in other countries. The respondents' average year of graduation from medical school was 1974.

Specialty, Residency Training, and Board Certification

The survey instrument asked respondents to list the specialties and subspecialties in which they have been trained, to specify the year they completed residency training, and to indicate for each specialty/subspecialty listed whether they are board certified. Respondents could list up to three specialties/subspecialties.

Table 1 below presents a summary of the specialty, residency training, and board certification information on those who responded to the survey. Ninety six percent (96%) of the respondents listed pediatric endocrinology as one of the specialties in which they had trained, while 90% said they had trained in general pediatrics. Of those who had trained in these specialties, over 90% reported that they were board certified.

Table 1. Residency Training and Board Certification of Survey Respondents

Specialty	Number (#)	Percent of Total (%)	Percent Board Certified (%)	Residency Completion Year (Mean)
General pediatrics	490	89.6	92.9	1980
Pediatric endocrinology[1]	526	96.2	92.4	1984
Internal medicine	11	2.0	72.7	1977
Medical genetics	9	1.6	55.6	1986
Other	29	5.3		
Total	547			

Main Practice Site

Respondents were asked to specify their main employment site; that is, the setting in which they spend the most time. Table 2 provides a breakdown of responses for this question. Over one half (51%) of the respondents said their main practice setting was at a medical school. The other respondents were fairly evenly divided in their responses, with 8% saying their primary practice setting was a pediatric group; 8%, solo practice; 8% a multispecialty group; 6%, a specialty group; and 6%, an HMO.

Table 2. Main Practice Site

Main Site	Percentage of Respondents (%)
Medical school	51.3
Pediatric group	7.8
Solo practice	7.8
Multispecialty group	7.6
Specialty group	6.3
HMO staff/group model	5.5
Community/staff model hospital	4.5
Uniformed health services clinic	2.1
Community health center/department	1.7
Other	5.5

[1] The number of respondents who said they are sub-board certified in pediatric endocrinology is greater than the number who said they are certified in general pediatrics. The fact that the numbers reflected in Table 1 are self-reported accounts for this discrepancy.

When asked to describe the area in which their primary practice site is located, 42% said it is an urban--not inner city--area; 35%, urban--inner city; 20%, suburban; and 3%, rural.

Time Spent in Professional Activities

Table 3 depicts the average percentage of time spent by pediatric endocrinologists in various professional activities. On average, over 60% of the total time spent per week by pediatric endocrinologists in professional activities is devoted to direct patient care, with 11% devoted to teaching; 10%, to administration; 8% to clinical research; and 5% to basic science research. Although virtually all pediatric endocrinologists provide direct patient care, nearly one fifth (19%) do not devote any time to teaching; over one third (35%) spend no time in administration; and nearly one half (46%) spend no time in clinical research.

On average, pediatric endocrinologists typically work 55 hours per week.

Table 3. Average Percent of Time per Week in Professional Activities

Professional Activity	Percentage of Time (%)
Direct patient care	61.3
Teaching	10.9
Administration	10.2
Clinical research	8.3
Basic science research	5.0
Health services research	0.4
Resident or fellow in training	0.3
Other, non-direct patient care	3.6

Ninety seven percent (97%) of the respondents reported that they spend some of their direct patient care time in a pediatric medical subspecialty (for the most part, pediatric endocrinology), 46% said they spend some time in primary care pediatrics, and 9% said they spend some time in another specialty, such as internal medicine (adult endocrinology).

Those physicians who said they spend some of their direct patient care time in pediatric endocrinology reported spending an average of 78% of their time providing such care.

Those who indicated that they spend some time in primary care pediatrics reported spending an average of 45% of their time providing such care.

Referrals

Ninety six percent (96%) of the respondents reported that they receive referrals for pediatric patients. Table 4 displays the source of these referrals, by specialty.

Table 4. Source of Referrals of Pediatric Patients to Endocrinologists

Source of Referrals	Percentage (%)
Pediatric generalists	95.6
Family physicians	87.7
Pediatric medical/surgical subspecialists	80.8
Pediatric nurse practitioners	62.0
Physician assistants	42.4
Adult medicine subspecialists	38.0
General internists	38.0
Obstetricians/gynecologists	36.3
Others	10.6

Among those pediatric endocrinologists who receive referrals for pediatric patients, over 80% said they receive referrals from pediatric generalists, family physicians, and pediatric medical/surgical subspecialists, while over 60% said they get referrals from pediatric nurse practitioners.

The respondents who said they receive referrals for pediatric patients also were asked whether they receive referrals from urgent care centers, community agencies, and school districts. Fifty eight percent (58%) said they receive referrals from community agencies; 54%, from urgent care centers; and 47%, from school districts. Twenty six percent (26%) of the respondents said they do not receive pediatric referrals from any of those three sources.

Only 16% of the respondents said that their pediatric referrals come exclusively from within their own practice or managed care network, while 72% said that some of their referrals come from sources outside of their network (12% said they are not in a network).

Among those respondents who reported that they receive referrals, only 63% said that the volume or complexity (or both) of the pediatric referrals they have received in the last twelve months has changed compared to previously, while 37% said that neither the volume nor the complexity has changed.

Among those pediatric endocrinologists who have experienced a change in the volume or complexity of pediatric referrals, 73% indicated that they have seen an increase in the volume of referrals and 36% said they have seen an increase in the complexity of referrals. Only 17% said there has been a decrease in the volume of referrals and only 5% said there has been a decrease in the complexity of referrals. Ten percent (10%) said they have experienced no change in the volume of referrals and 59% said they have experienced no change in the complexity of the cases referred to them.

Respondents who said they have experienced a change in the volume or complexity of pediatric referrals in the past twelve months were asked to describe the factors to which this change could be attributed (more than one factor could be specified). Forty five percent (45%) of the respondents said an increased likelihood of general pediatricians and other generalists to treat less complex subspecialty patients has caused a change in referrals, 38% said a decreased likelihood of general pediatricians and other generalists to treat more complex subspecialty patients was a cause for the change, 32% said an increased incidence of illness in their community has affected referrals, 25% cited increased competition from other pediatric subspecialists as a cause for a change in referrals, and 15% pointed to an increase in referrals from adult medicine subspecialists.

Need for Additional Training

When asked whether recent changes in the health care system have brought about a need for some retraining on their part, 65% of the respondents indicated that the changes have not necessitated additional training in primary care and 70% said the changes have not necessitated additional training in their subspecialty (ie, pediatric endocrinology). However, 29% of the respondents expressed a need for a “little” additional training in primary care and 28% indicated a need for a little additional training in their subspecialty. Only 6% of the respondents expressed a need for “much more” training in primary care and only 3% indicated a need for much more training in their subspecialty.

Competition

Sixty nine percent (69%) of the respondents said they face competition for pediatric subspecialty services in their geographical area. Among those who said they face competition, over three fourths said they face competition from other pediatric subspecialists and over one half said they face competition from physicians trained in adult medicine in their subspecialty (ie, adult endocrinologists) (see Table 5). Twenty percent or more of the respondents said they face competition from general pediatricians and family physicians.

Table 5. Perceived Sources of Competition for Pediatric Subspecialty Services

Source of Competition	**Percentage of Respondents (%)**
Other pediatric subspecialists	76.9
Physicians trained in adult medicine in my subspecialty	59.0
General pediatricians	29.5
Family physicians	20.4
Non-physician medical personnel (eg, advanced practice nurses, chiropractors)	3.9
Urgent care centers	2.5
Related health professionals (eg, psychologists, nutritionists)	1.1
Other	3.6

***** Percent of respondents who said they face competition from any source

Of those respondents who said they face competition for pediatric subspecialty services in their geographic area, over one third (39%) have modified their practice as a result of such competition. Among those who have modified their practices, over one half have increased their office hours, nearly one third have decreased their research/administrative activities, and over one fourth have increased the number and/or responsibilities of their support staff (see Table 6).

Table 6. Practice Modifications as a Result of Competition

Change	Increased (%)	Decreased (%)	No Change (%)
Office hours	50.8	0.8	48.5
Number of physicians for practice	16.9	15.4	67.7
Number/responsibilities of support staff	28.5	6.9	64.6
Number of advanced practice nurses	20.8	2.3	76.9
Fees	5.4	6.9	87.7
Amount of research/administrative activities	13.1	31.5	55.4

When asked whether, during the last twelve months, their practice had been sold to or merged with another practice or health care organization, 10% responded affirmatively.

Workforce

Less than one half (40%) of the respondents said they anticipated their communities would need additional pediatric subspecialists in the next 3-5 years. Thirty percent (30%) said there would be a need for more pediatric subspecialists in their discipline (ie, pediatric endocrinology) and 20% felt there would be a need for additional subspecialists in other pediatric subspecialties. When asked whether they or their employer would be hiring additional, non-replacement pediatric subspecialists in their field (ie, pediatric endocrinology) in the next 3-5 years, 21% of the respondents said “yes,” 54% said “no,” and 25% said they were unsure.

Income

Pediatric endocrinologists rely on a variety of payment sources for their income, but straight salaries and fee for service arrangements are most common (see Table 7). Over one half of the respondents said they receive some income from straight salaries, while over one third said they receive some income from fee for service (traditional and discounted) payment arrangements. Approximately one fourth of the respondents said they receive some income from capitation arrangements and salaries with performance incentives.

Table 7. Sources of Income for Pediatric Endocrinologists

Source of Income	Percentage With Income from Each Source (%)
Traditional fee for service	38.7
Discounted fee for service	37.8
Salary	53.2
Salary with performance incentive	26.3
Prepaid, capitated, nonsalaried	28.0
Prepaid, capitated, salaried	24.9

Table 8 provides information on the percentage of pediatric endocrinologists' income that comes from various sources. Excluding those who said they did not know the breakdown of their income by source, most of the respondents who said they receive some income from fee-for-service payment and capitation indicated that these sources account for 33% or less of their total income, while those who said they receive income from salaries said this source accounts for 67-100% of their income.

Table 8. Percent of Income by Source

Income Source	0-33% (%)	34-66% (%)	67-100% (%)	Don't Know (%)
Traditional fee for service	57.7	20.6	7.7	13.9
Discounted fee for service	49.5	27.0	6.1	17.3
Prepaid, capitated nonsalaried	54.8	17.1	5.5	22.6
Prepaid, capitated, salaried	42.4	13.6	20.0	24.0
Salary	11.8	6.5	74.5	7.2
Salary with incentive	23.0	5.9	52.6	18.5

Finally, when asked if they have used telemedicine, fax machines or other forms of information technology as part of a consultation with another practitioner because of lack of ready access to appropriate subspecialists (eg, in a rural area), 61% of the respondents responded affirmatively.

Summary

- The main practice setting for over one half of pediatric endocrinologists is at a medical school. Most others are in solo practice or work in a pediatric group, a multispecialty group, a specialty group, or an HMO.

- For over three fourths of pediatric endocrinologists, their primary practice site is located in an urban area.

- On average, over 60% of the total time spent per week by pediatric endocrinologists in professional activities is devoted to direct patient care, with 11% devoted to teaching; 10% to administration; 8% to clinical research; and 5% to basic science research.

- Pediatric endocrinologists on average devote over 75% of their time to providing pediatric endocrinology care. Those who spend some time in primary care pediatrics spend an average of 45% of their time providing such care.

- Over 95% of pediatric endocrinologists receive referrals for pediatric patients, with the major referral sources being pediatric generalists, family physicians, and pediatric medical/surgical subspecialists.

- Of those pediatric endocrinologists who receive referrals, over 80% receive referrals from one or more of the following sources: urgent care centers, community agencies, and school districts.

- Among those pediatric endocrinologists who receive referrals, more than 60% have not experienced a change in the volume or complexity of the pediatric referrals they have received in the last twelve months compared to previously. Among those who have experienced a change, the most common changes have been an increase in the volume and complexity of referrals.

- Most pediatric endocrinologists attribute changes in referrals to an increased likelihood of general pediatricians and other generalists to treat less complex subspecialty patients (and a decreased likelihood to treat more complex subspecialty patients) and to an increased incidence of illness in their community.

- Approximately two thirds or more of pediatric endocrinologists believe that recent changes in the health care system have not necessitated additional training on their part in primary care or in their subspecialty. However, nearly 30% feel they need a “little” additional training in those areas.

- Nearly 70% of pediatric endocrinologists feel they face competition for pediatric subspecialty services, with the major source of competition being other pediatric subspecialists.

- Of those pediatric endocrinologists who feel they face competition for pediatric subspecialty services in their geographic area, nearly 40% have modified their practice as a result of such competition. Among those who have modified their practices, the most common changes have been to increase office hours and to decrease research and administrative activities.

- Nearly one third of pediatric endocrinologists anticipate that their communities will need additional pediatric endocrinologists in the next 3-5 years. More than one half, however, say that neither they nor their employer will be hiring additional, non-replacement pediatric endocrinologists during that period of time.

- Pediatric endocrinologists rely on a variety of payment sources for their income, but straight salaries and fee for service arrangements are most common: over one half of pediatric endocrinologists receive some income from straight salaries, while over one third receive some income from fee for service (traditional and discounted) payment arrangements.

- Excluding those who do not know the breakdown of their income by source, most pediatric endocrinologists who receive some income from fee-for-service payment and capitation say that these sources account for 33% or less of their total income, while those who receive income from salaries say this source accounts for 67-100% of their income.