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### Pediatric Subspecialty Fellowship Clinical Training Project: Recent Graduates and Midcareer Survey Comparison

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## Pediatric Subspecialty Fellowship Clinical Training Project: Recent Graduates and Midcareer Survey Comparison

### abstract

**BACKGROUND:** The American Board of Pediatrics charged a task force to examine fellowship training. As part of that process, a study was conducted to assess the perceptions of fellowship training by those who had recently completed training and those who were in the middle of their careers.

**METHODS:** The American Board of Pediatrics provided a random sample of subspecialists stratified across all 14 subspecialties (N = 5072). Subspecialists were identified either as recent graduates (N = 2702), those who had completed fellowship within the last 5 years or as midcareer subspecialists (N = 2370), and those who completed fellowship 15 to 20 years ago. Two distinct 20-item structured questionnaires were administered by mail, 1 for each group, in January through March 2012.  $\chi^2$  Statistics were used to assess differences between groups.

**RESULTS:** Response rates were 77.8% for recent graduates and 73.8% for midcareer subspecialists. Overall, most subspecialists described their work primarily as a clinician (36%) or as a clinician-educator (48%). Fewer (12%) reported primarily research. The majority of subspecialists (55%) have full-time academic appointments, but recent graduates are more likely to do so than midcareer subspecialists (62% vs 48%; P < .0001). The majority (60%) believe that the overall length of training in their subspecialty should remain at 3 years. However, almost one-third (29%) believe there should be 2 different tracks in their subspecialty, shorter for clinicians and/or clinician-educators and longer for those pursuing an academic career.

**CONCLUSIONS:** We found a significant range of opinion regarding subspecialty training. Some of this variation is undoubtedly due to differences between the individual subspecialties. *Pediatrics* 2014;133:S70—S75

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#### **KEY WORDS**

fellowship, training, subspecialty, education

#### **ABBREVIATIONS**

ABP—American Board of Pediatrics QI—quality improvement

Dr Freed conceptualized and designed the study and critically reviewed and revised the manuscript; Ms Dunham designed the data collection instrument, coordinated and supervised data collection, and drafted the initial manuscript; Ms Moran conducted data collection and tracking, coded the responses, and reviewed and revised the manuscript; Ms Spera carried out the analyses and reviewed and revised the manuscript; Dr McGuinness reviewed and revised the data collection instrument and critically reviewed the manuscript; Dr Stevenson reviewed and interpreted the data and critically reviewed the manuscript; and all authors approved the final manuscript as submitted.

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The American Board of Pediatrics (ABP) charged a task force with examining multiple aspects of fellowship training. As part of that process, a series of studies were conducted to help inform the task force during their deliberations. One of these studies focused on the assessment of the perceptions of different components of fellowship training by those who had recently completed training and also by those who were in the middle of their careers. Conceptually, both perspectives were thought to be important, both in terms of a "reality check" on current training to prepare new subspecialists for the first jobs of their careers and with regard to what seasoned practitioners believe is important preparation for the duration of their professional life. Furthermore, understanding the specific components of current subspecialists' professional activities would allow the task force to assess whether current training structures match those efforts.

There are 14 pediatric subspecialties for which the ABP administers a certifying examination.¹ Requirements for fellowship training are set by the Residency Review Committee of the Accreditation Council of Graduate Medical Education.² Each subspecialty also is responsible to the Residency Review Committee for certifying all subspecialty training programs. The ABP establishes criteria to determine which subspecialty fellowship graduates are eligible to sit for subspecialty board examinations.¹

Changes have been made to the required components of fellowship training over the past decade, most notably with regard to nonclinical training requirements.<sup>3</sup> These have included a focus on scholarly activity, the creation of Scholarship Oversight Committees, and the development of a recommended scholarly activities core curriculum across subspecialties for those in fellowship training.

This article provides an overview across all ABP pediatric subspecialties. Results of individual subspecialties are found in other articles in this supplement.

#### **METHODS**

#### Sample

The ABP provided a random sample of pediatric subspecialists in the United States stratified across all 14 subspecialites (N = 5072) (Table 1). All subspecialists in the sample were <65 years and had completed training in only 1 subspecialty. Subspecialists were identified either as recent graduates (N = 2702), defined as those who had completed fellowship training within the last 0 to 5 years, or as midcareer pediatric subspecialists (N = 2370), defined as those who had completed fellowship training 15 to 20 years ago.

For those subspecialties with >250 physicians in each career category, we used a stratified random sample of a total of  $\sim 500$  subspecialists ( $\sim 250$  per career category) for each subspecialty. This group included the subspecialties of cardiology, emergency medicine, critical care, hematology-oncology, and neonatal perinatal medicine. In all other subspecialties, there were < 250 in each career category and we selected all subspecialists (meeting the sample criteria) in each category.

#### **Survey Instrument**

In collaboration with the ABP Research Advisory Committee, we developed 2 distinct 20-item structured questionnaires to be administered by mail, 1 for each career group. Both surveys were composed of a combination of fixedchoice and Likert scale questions and were designed to be completed in  $\leq 10$ minutes. The surveys focused on subspecialist perspectives regarding the current landscape of fellowship training and perceptions of optimal fellowship training length in all subspecialties. The survey of recent graduates gathered additional information on value and utilization of their scholarly activity experiences, whereas the survey of midcareer subspecialists placed greater emphasis on the scope of scholarly activity requirements.

#### **Questionnaire Administration**

The first mailing of the pediatric subspecialist surveys was sent via Priority Mail to the sample of 2702 recent graduates and 2370 midcareer subspecialists in January 2012. Each survey packet contained a personalized cover letter signed by the principal investigator, the instrument, a business reply mail envelope, and a \$5 bill as an incentive to complete the questionnaire. Two additional mailings were sent to nonrespondents in February and March of 2012.

#### **Data Analysis**

For each specific survey, frequency distributions were calculated for all

**TABLE 1** Total Sample of Pediatric Subspecialists

Subspecialty	Overall, N	Recent Graduates, N	Midcareer, N
Adolescent medicine	198	87	111
Cardiology	499	249	250
Child abuse	50	46	4
Critical care	499	249	250
Developmental-behavioral	150	84	66
Emergency medicine	500	250	250
Endocrinology	490	326	164
Gastroenterology	493	297	196
Hematology-oncology	498	248	250
Infectious diseases	483	237	246
Neonatology	493	244	249
Nephrology	273	155	118
Pulmonology	289	140	149
Rheumatology	157	90	67

N = 5072.

survey items.  $\chi^2$  Statistics were used to determine the differences between the recent graduates and the midcareer subspecialists. The study was approved by the University of Michigan Medical School Institutional Review Board.

Of the 2702 survey packets mailed to

recent graduates of pediatric fellowship

#### **RESULTS**

#### **Response Rate**

programs, 1981 physicians returned the survey, 156 surveys were undeliverable, and 5 physicians declined to complete the survey, which resulted in an overall response rate of 77.8%. Fortythree physicians who returned the survey were ineligible because they did not complete a pediatric fellowship program, which left a total of 1938 surveys for analysis. Of the 2370 survey packets mailed to midcareer pediatric subspecialists, 1701 physicians returned the survey, 65 surveys were undeliverable, and 25 physicians declined to complete the survey. which yielded an overall response rate of 73.8%. Four physicians who returned the survey were ineligible because they did not complete a pediatric fellowship program, which left a total of 1697 surveys for analysis.

#### **Current Clinical Practice and Professional Role**

The vast majority of both recent graduates and midcareer subspecialists reported that the primary concentration of their clinical practice is subspecialty care (Table 2). However, slightly more midcareer subspecialists focus on primary care than their own subspecialty (7% vs 2%; P < .0001).

Most subspecialists described their work primarily as a clinician (36%) or as a clinician-educator (48%). Fewer (12%) reported that they work primarily as a researcher with only some clinical activity, with recent graduates more likely to do so (15% vs 9%; P <.0001). Only 2% of recent graduates and 6% of midcareer graduates were clinically inactive at the time of the study. A significantly greater proportion of

recent graduates than midcareer subspecialists (63% vs 48%; P < .0001) worked in a university/medical school, whereas a greater proportion of midcareer subspecialists were in private practice (Table 3).

#### **Research Endeavors and Academic Appointments**

Overall, 56% of subspecialists reported they are currently engaged in research of any type. Of these, recent graduates were more likely than midcareer subspecialists to be so engaged (61% vs 51%; P < .0001). The largest percentage (63%) were involved in non-industrysponsored clinical research, whereas 15% of recent graduates and 10% of midcareer subspecialists were engaged in basic research (P < .0001) (Table 4). The majority of subspecialists (55%) have full-time academic appointments, but recent graduates are more likely to do so than midcareer subspecialists (62% vs 48%; P < .0001). In contrast, more midcareer subspecialists had no academic appointment (24% vs 18%; P < .0001), with the remainder either having parttime academic positions or serving as adjunct, volunteer, or courtesy faculty.

#### **Perceptions on Clinical Training Duration**

Most subspecialists (87%) believe that the duration of clinical training they received was appropriate for their first job after fellowship training. Only 12% of recent graduates and 10% of midcareer graduates reported that the duration of clinical training should be increased. Among these subspecialists, the most common reasons cited for the need for additional clinical training were the need for further development of clinical independence (65%) and an increase in the types of procedures and/or complexity of patient care (57%).

A clear majority of subspecialists (76%) believe that the required clinical training time be the same for all fellows in their respective subspecialty, regardless of career path (ie, those who pursue primarily a clinical versus primarily a research career). A smaller proportion believed that those fellows pursuing primarily a clinical career should complete additional clinical training (16%) and that those fellows planning to pursue primarily a research career should complete less clinical training (8%). No differences

TABLE 2 Provision of Direct or Consultative Pediatric Subspecialty Care

Response	Overall (N = 3624), % (n)	Recent Graduates (N = 1932), % (n)	Midcareer (N = 1692), % (n)	Р
Yes, the primary focus of my clinical practice is subspecialty care	86 (3111)	90 (1746)	81 (1365)	<.0001
Yes, my clinical practice is a relatively even mix of primary and subspecialty care	6 (201)	5 (102)	6 (99)	
No, the primary focus of my clinical practice is primary care	4 (164)	2 (42)	7 (122)	
No, I am not currently engaged in direct or consultative patient care	4 (148)	2 (42)	6 (106)	

N = 3624

 TABLE 3
 Primary Practice Ownership

	0verall (N = 3607), % (n)	Recent Graduates $(N = 1921), \% (n)$	Midcareer (N = 1686), % (n)	Р
Private practice (group or solo)	18 (667)	14 (271)	23 (396)	<.0001
University/medical school	56 (2016)	63 (1210)	48 (806)	
Community or non-university-affiliated hospital	13 (471)	12 (224)	15 (247)	
Managed-care organization	2 (76)	2 (43)	2 (33)	
Federal, state, or local government	5 (163)	5 (96)	4 (67)	
Other/not applicable	6 (214)	4 (77)	8 (137)	

N = 3607.

TABLE 4 Subspecialists Declared Field of Research

	Overall (N = 2112), % (n)	Recent Graduates $(N = 1229), \% (n)$	Midcareer $(N = 883), \% (n)$	Р
Basic research	13 (274)	15 (184)	10 (90)	<.0001
Health services research	7 (139)	6 (80)	7 (59)	
Clinical research, primarily industry-sponsored drug trials	12 (256)	8 (99)	18 (157)	
Clinical research, non-industry-sponsored	63 (1331)	66 (808)	59 (523)	
Educational research	5 (112)	5 (58)	6 (54)	

N = 2112.

were seen between the recent graduates and midcareer subspecialists.

### Perceptions on Scholarly Activity Duration

When asked, based on their experience in fellowship training, whether they believe there was a need in their specific subspecialty to change the recommended duration of scholarly activity during fellowship training, 58% believed that the current recommended duration is appropriate. More than one-fourth (28%) stated that the recommended duration should be decreased but not eliminated and 11% that the amount of time should be increased. Among the 28% (n = 989) who believe that the recommended duration should be decreased, the most common reasons cited were that those fellows who plan to pursue primarily clinical careers do not need the current recommended duration of scholarly activity during training (78%), that more time should be devoted to additional clinical training (45%), that it would shorten fellowship training and make subspecialty training more attractive (39%), and that scholarly activity requirements discourage pediatric residents from pursuing fellowship training (29%).

Among the 11% who believe the duration of scholarly activity should be increased, the most common reasons cited were that fellows needed more training to be prepared for junior faculty positions (79%) and that duty hour restrictions have negatively affected available time for scholarly activity (34%). No meaningful differences were seen between the recent graduates and midcareer subspecialists.

When asked whether the duration of scholarly activity should be the same for all fellows in their individual subspecialty, regardless of career path (ie, those who pursue primarily a clinical versus primarily a research career), 46% agreed with the statement, whereas 30% believe that fellows pursuing a research career should have additional training in scholarly activity and 24% that those fellows planning to pursue primarily a clinical career should have less training in scholarly activity. No meaningful differences were seen between the recent graduates and midcareer subspecialists. Slightly fewer than half (48%) of respondents reported that scholarly activity during fellowship did not affect their choice of career path after training, whereas 22% stated that scholarly activity influenced their decision to pursue an academic research career. The remainder reported that scholarly activity influenced them to pursue a purely clinical career (12%) or a clinician-educator position (18%).

When examining different aspects of scholarly activity training and experiences, there were several strongly endorsed concepts. However, >10% did not believe training all subspecialists in quality improvement (QI) was an important component of fellowship training (Table 5). No meaningful differences were seen between the recent graduates and midcareer subspecialists.

### Overall Length of Fellowship Training

The majority of respondents (60%) believe that the overall length of training in their subspecialty should remain at 3 years. However, almost one-third (29%) believe there should be 2 different tracks in their subspecialty: a shorter duration for clinicians and/or clinician educators and a longer duration track for those who intend to pursue an academic career. The recent graduates were more likely than the midcareer subspecialists to favor the 2-track system (31% vs 26%; P < .0001) (Table 6).

When queried regarding whether all pediatric subspecialty trainees (across all pediatric subspecialties) should have the same required overall duration of fellowship training, 75% affirmed the concept that it should be the decision of each subspecialty to determine the appropriate length of training. Recent graduates were slightly more likely than midcareer subspecialists to hold this perspective (77% vs 72%; P < .003).

#### **DISCUSSION**

Among the most important findings in this study is that for almost 20% of midcareer subspecialists, the primary focus of their clinical practice is not subspecialty care and that the same is true for 10% of those having recently completed their fellowship. This finding has significant implications for the capacity of the subspecialty workforce to care for the growing numbers of chil-

dren with chronic illness who seek such care. Although efforts have been made to increase both the absolute number of pediatric subspecialists as well as the proportion of pediatricians pursuing subspecialty fellowship training,4,5 it is also of potential value to examine the effectiveness of those efforts with regard to the clinical capacity provided by those in the field. The reasons for this phenomenon are unknown, as is the degree to which this differs across subspecialties. Strategies to increase the availability of subspecialty services for children must take this phenomenon into account and assess any trends in its occurrence.

Also of interest is the finding that fewer than half of midcareer subspecialists have their primary clinical practice in a university or academic medical center. For more than one-third of recent grad-

uates, this is also the case. Although many perceive of limited opportunities in private practice for pediatric subspecialists, consistent with other studies,6 approximately one-fourth of midcareer subspecialists are in such a practice setting. The proportionally smaller number of recent graduates in private practice may indicate that some subspecialists start their careers in an academic setting but may move to other opportunities as their careers unfold. Regardless, these data reveal that both the patterns of employment for pediatric subspecialists and potentially their patient populations may be shifting. Implications for training the next generation of pediatricians and pediatric subspecialists as well as the future research capacity in these fields are also evident if a smaller proportion engages in academic efforts.

The majority of both early- and midcareer subspecialists engage primarily in clinical research as opposed to basic or health services. It is unclear from our results as to what proportion of these individuals actually lead or direct such studies, or play more of a supporting role with regard to enrolling patients. Historically, formal training in the complexities and science of clinical research has not been a primary focus of most pediatric fellowship training. To ensure a robust pediatric clinical research agenda for the future, efforts should be made to train rigorously a cadre of subspecialists in the science of clinical research and its relationship to both the

**TABLE 5** Agreement With the Following Statements Related to Scholarly Activity Requirements During Fellowship Training

	Overall, Agree (N = 3621), % (n)
Training future researchers in my subspecialty is an important component of fellowship training	94 (3398)
Training all subspecialists to be able to critically appraise new literature is an important component of fellowship training	98 (3572)
Training all subspecialists to be competent educators/teachers is an important component of fellowship training	91 (3286)
Training all subspecialists in quality improvement activities is an important component of fellowship training	87 (3142)
Scholarly activity during fellowship should be tailored to the career goals and interests of individual fellows	90 (3259)
All fellows should complete a scholarly activity project as part of fellowship training	82 (2981)

N = 3621.

TABLE 6 Subspecialist Perspective on the Need to Change the Overall Length of Fellow Training

	_	=		
	Overall (N = 3611), % (n)	Recent Graduates (N = 1925), % (n)	Midcareer (N = 1686), % (n)	Р
No, I believe that the required training duration, regardless of career path, should remain at 3 years	60 (2167)	59 (1138)	61 (1029)	<.0001
Yes, I believe that the required training duration, regardless of career path, should be shortened to fewer than 3 years	6 (223)	6 (126)	6 (97)	
Yes, I believe that there should be 2 different tracks, a shorter duration track for clinicians or clinician-educators and a longer duration track for fellows who plan to pursue academic research	29 (1036)	31 (592)	26 (444)	
Yes, I believe that the required training duration, regardless of career path, should be extended to more than 3 years	5 (185)	4 (69)	7 (116)	

N = 3611.

basic and health services research enterprises.

There have been significant concerns raised among some leaders in pediatrics regarding the need to increase the focus of fellowship training on research to increase the pipeline of subspecialists conducting research.<sup>3,7</sup> Of our respondents, only 11% posited that the amount of time devoted to scholarly activity should be increased. This proportion is similar to the proportion of respondents who reported spending the majority of their time engaged in research. However, 30% of respondents supported the notion that those fellows who specifically intend to pursue a research career should have additional training time in scholarly activity. This percentage is approximately the same proportion (29%) who expressed the belief that there should be 2 different career tracks in fellowship, a shorter duration for clinicians and clinician-educators, and a longer duration track for fellows who plan to pursue and a career in academic research.

There has been significant recent emphasis on the desirability of training all

subspecialists in area of OI and quality assessment. Indeed, a significant portion of the Maintenance of Certification program of the ABP involves participation in OI initiatives,8 and all pediatric residents are now required to participate in a OI project during training.9 Although 87% of our respondents agreed that training all subspecialists in OI activities is an important component of fellowship training, it ranked fifth out of 6 choices in importance. Future efforts to impart the importance of QI in improving patient safety and other aspects of care will need to be augmented by program directors. In contrast to internal medicine, all pediatric subspecialty fellowship programs governed by the ABP are 3 years in length. 10,11 Overall, our respondents supported the concept that each specific subspecialty should determine the appropriate length of overall training in their field. This change in responsibility would be a significant departure from current practice and change the nature of both authority and responsibility for the establishment of standards within the broader field of pediatrics.

#### **CONCLUSIONS**

We found a significant range of opinion regarding subspecialty training. Some of this variation is undoubtedly due to differences among the individual subspecialties. Other differences are related to the point in time of the careers of our respondents. Professionals are not static in their perceptions of their field and generational differences are known to occur. Appreciation of the differences, and the commonalities, among subspecialists is essential to the goal of both preserving the gains made for children's health through subspecialization and to furthering the work left to be done.

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