SUPPLEMENT ARTICLE

General Pediatrics Resident Perspectives on Training Decisions and Career Choice

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ABSTRACT

OBJECTIVE. Little is known regarding at what point during the training period residents in pediatrics make decisions on their future career choices. As part of a dedicated process of reexamining the structure of residency training in pediatrics, the American Board of Pediatrics sought information to better understand the influences, process, and sequencing of both residency program selection and career decision-making among residents.

METHODS. All pediatrics resident physicians in all training programs in the United States and Canada \((N = 8290)\) received the survey as part of the general pediatrics in-training examination. The survey focused on exploring how and when pediatrics residents make career choices and assessed perceived flexibility of their individual pediatrics residency program.

RESULTS. The response rate was 95%. Location was the most important factor in selecting a residency program for 42% of all residents. Almost half of the pediatrics residents planned to pursue fellowship training after residency, a proportion that changed little across the 3 training years (level 1: 47%; level 2: 49%; level 3: 47%). Those who planned to pursue a general pediatrics career (either with or without inpatient care) were more likely than those who intended to pursue fellowship training to report that lifestyle was the most important factor in their career choice (63% vs 21%).

CONCLUSIONS. Not surprisingly, different priorities motivate pediatricians to pursue specific programs for training and specific career options. The finding that those with the highest priority regarding lifestyle are more likely to pursue generalist training has implications for the generalist workforce, because those persons may also be more likely to seek part-time employment. Lifestyle concerns may need to be addressed in subspecialty training and subsequent subspecialty careers to ensure a continued flow of residents into fellowship training.

T HE DECISION-MAKING process of residents regarding their future career paths is believed to be associated with a variety of factors. Little is known regarding at what point during the training period residents in pediatrics make decisions on their future career choices. Previous studies have attempted to examine potential predictors during medical school through residency.\textsuperscript{1–3} It is likely that there are particular subgroups of residents for whom specific influences and experiences have greater influence than others.

It is also unknown whether residents choose specific training programs because of their perceived flexibility, whether they desire additional flexibility in their training experiences, and whether such flexibility would have an affect on career choice and the decision to pursue subspecialty fellowship training.

Residency training, with respect to duty hours, has changed considerably with the advent of the 80-hour workweek requirements. However, the fundamental structure of pediatrics programs, their mix of inpatient and outpatient care, and their degree of flexibility have remained relatively unchanged.

As part of a dedicated process of reexamining the structure of residency training in pediatrics, the American Board of Pediatrics sought information to better understand the influences, process, and sequencing of both residency program selection and career decision-making among residents, especially with regard to the decision to pursue general practice or subspecialty fellowship training.
METHODS

Sample
Each year in July, the American Board of Pediatrics administers the general pediatrics in-training examination to all current pediatrics residents in the United States of Canada. All pediatrics residents who participated in the 2007 general pediatrics in-training examination were considered eligible for the study (N = 8290).

Survey Instrument
In collaboration with the American Board of Pediatrics Research Advisory Committee, the research team developed a structured questionnaire with 10 fixed-choice items designed to be completed in 5 minutes or less. The survey focused on exploring how and when pediatrics residents make career choices and assessed perceived flexibility of their individual pediatrics residency program.

Questionnaire Administration
The survey was administered to 8290 level 1, 2, and 3 pediatrics residents as an optional addendum to the 2007 general pediatrics in-training examination.

Data Analysis
First, frequency distributions were calculated for all survey items according to training level. Next, comparisons were made between male and female respondents, US and Canadian medical school graduates (AMGs) versus international medical school graduates (IMGs), and respondents from large (>60 residents) versus medium (31–60 residents) versus small (≤30 residents) residency programs. Additional analyses compared those with different postresidency career plans (eg, general practice versus subspecialty training). \( \chi^2 \) statistics were used to determine level of association between the outcome variables of training and career decisions with the predictor variables.

RESULTS

Response Rate
Of the 8290 residents, 408 chose not to complete the survey, resulting in a response rate of 95% (N = 7882).

Respondent Demographics
The majority of respondents were female (73% [n = 6019]) and graduates of US or Canadian medical schools (76% [n = 6284]). Twenty-three percent of respondents were from small residency programs, defined as having 30 or fewer residents (n = 1925). Thirty-one percent of respondents were from large programs, defined as having 61 or more residents in the program (n = 2567).

FACTORS THAT AFFECT RESIDENCY PROGRAM SELECTION
Location was the most important factor in selecting a residency program for 42% of all residents; however, significant variation was seen among AMGs versus IMG residents (46% vs 27%; \( P < .0001 \)). Less commonly noted as the most important factor were lifestyle issues (eg, call schedule, family friendly) (22%), the prestige of the program (17%), and specific patient populations (13%). Men were more likely than women to name program prestige as the most important factor in their program choice (22% vs 16%; \( P < .0001 \)). Only small differences were seen between women and men regarding reporting of the importance of lifestyle issues (22% vs 20%). Program flexibility was identified by only 7% of all residents as the most important factor in choosing a program. Several differences were seen among residents from differently sized programs.

Program location was the most important factor in residency program selection for the largest proportion of residents in small, medium, and large programs, but lifestyle was the second most common factor identified by residents in small and medium programs, whereas prestige was the second most common factor identified by those in large programs (Table 1).

POSTRESIDENCY PLANS AND CAREER CHOICE
Most residents had not changed their postresidency career plans in the previous 12 months (level 1: 64%; level 2: 57%; level 3: 64%).

Almost half of the pediatrics residents planned to pursue fellowship training after residency, a proportion that changed little across the 3 training years (level 1: 47%; level 2: 49%; level 3: 47%). More than onequarter (27% [n = 669]) of level 3 residents planned to practice general pediatrics with little or no inpatient care. Women were more likely than men and AMGs more likely than IMGs to plan careers in general pediatrics, whereas men were more likely than women and IMGs more likely than AMGs to intend to pursue fellowship training. Residents in small programs were less likely than those in medium or large programs to plan to pursue fellowship training (41% vs 48% vs 51%; \( P < .0001 \)). Few (3%) residents overall were planning careers in which they would provide hospitalist care only (Table 2).

Among residents who did not intend to pursue fellowship training (n = 4094), the majority planned to practice in an area with local access to subspecialists (76%) and to care for a combination of publicly and privately insured populations (70%). Women were more likely than men to plan to practice in areas with local access to subspecialists (78% vs 70%; \( P < .0001 \)). Only 3% intended to care for an exclusively privately insured population, whereas 13% planned to provide care...
exclusively to publicly insured or underserved populations. No differences were seen according to year of training.

**INFLUENCES ON POSTRESIDENCY CAREER CHOICE**

Differences were seen among residents’ report of the most important factor that influenced their postresidency career choice. Level 3 residents were more likely than level 1 residents (40% vs 29%; $P < .0001$) and women were more likely than men (39% vs 27%; $P < .0001$) to identify structured hours/lifestyle as the most important factor in their future plans. Men were more likely than women to indicate interest in a specific disease or patient population (52% vs 42%; $P < .0001$), as were those in large programs compared with medium or small programs (51% vs 43% vs 39%; $P < .0001$). Financial considerations were reported to be the most important factor for no more than 3% of any group (Table 3).

Those who planned to pursue a general pediatrics career (either with or without inpatient care) were more likely than those who intended to pursue fellowship training to report that structured hours/lifestyle was the most important factor in their career choice (63% vs 21%; $P < .0001$). Conversely, those who intended to pursue subspecialty training were more likely than those who planned to pursue general pediatrics to state that interest in a specific disease or patient population was the most important factor in their career choice (71% vs 19%; $P < .0001$).

**IMPRESSIONS OF RESIDENCY PROGRAM CAREER ASSISTANCE**

Overall, 74% of residents believed that their training programs offered enough flexibility to meet the needs of their future career path. Level 3 residents were more likely to express satisfaction with program flexibility.

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**TABLE 2** Postresidency Plans ($N = 7861$)

<table>
<thead>
<tr>
<th>Postresidency Plans, % ($n$)</th>
<th>General Pediatrics With Little or No Inpatient Care</th>
<th>General Pediatrics, Outpatient Care With Substantial Inpatient Care</th>
<th>Hospitalist Care Only</th>
<th>Pursue Fellowship Training</th>
<th>Unsure</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ($N = 2757$)</td>
<td>15 (416)</td>
<td>7 (201)</td>
<td>2 (45)</td>
<td>47 (1282)</td>
<td>29 (813)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>2 ($N = 2616$)</td>
<td>20 (508)</td>
<td>9 (245)</td>
<td>3 (80)</td>
<td>49 (1292)</td>
<td>19 (491)</td>
<td></td>
</tr>
<tr>
<td>3 ($N = 2488$)</td>
<td>27 (669)</td>
<td>13 (317)</td>
<td>3 (90)</td>
<td>47 (1161)</td>
<td>10 (251)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female ($N = 5723$)</td>
<td>23 (1339)</td>
<td>10 (566)</td>
<td>3 (174)</td>
<td>42 (2412)</td>
<td>22 (1232)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Male ($N = 2138$)</td>
<td>12 (254)</td>
<td>9 (197)</td>
<td>2 (41)</td>
<td>62 (1323)</td>
<td>15 (323)</td>
<td></td>
</tr>
<tr>
<td>Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMG ($N = 5974$)</td>
<td>23 (1338)</td>
<td>8 (496)</td>
<td>3 (169)</td>
<td>44 (2623)</td>
<td>22 (1328)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>IMG ($N = 1887$)</td>
<td>13 (235)</td>
<td>14 (267)</td>
<td>2 (46)</td>
<td>59 (1112)</td>
<td>12 (227)</td>
<td></td>
</tr>
<tr>
<td>Program size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small ($N = 1799$)</td>
<td>23 (418)</td>
<td>15 (264)</td>
<td>2 (43)</td>
<td>41 (741)</td>
<td>19 (333)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Medium ($N = 3582$)</td>
<td>21 (736)</td>
<td>9 (317)</td>
<td>3 (99)</td>
<td>48 (1721)</td>
<td>20 (709)</td>
<td></td>
</tr>
<tr>
<td>Large ($N = 2480$)</td>
<td>18 (439)</td>
<td>7 (162)</td>
<td>3 (73)</td>
<td>51 (1273)</td>
<td>21 (513)</td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 3** Most Important Factor in Postresidency Career ($N = 7847$)

<table>
<thead>
<tr>
<th>Factors, % ($n$)</th>
<th>Structured Hours/Lifestyle</th>
<th>Financial Considerations</th>
<th>Interest in Specific Disease/Patient Population</th>
<th>Location</th>
<th>Have Not Decided on Career</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training level</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1 ($N = 2748$)</td>
<td>29 (787)</td>
<td>2 (48)</td>
<td>44 (1220)</td>
<td>5 (128)</td>
<td>20 (565)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>2 ($N = 2611$)</td>
<td>38 (985)</td>
<td>1 (39)</td>
<td>46 (1193)</td>
<td>6 (152)</td>
<td>9 (242)</td>
<td></td>
</tr>
<tr>
<td>3 ($N = 2488$)</td>
<td>40 (994)</td>
<td>2 (60)</td>
<td>44 (1099)</td>
<td>8 (200)</td>
<td>6 (135)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female ($N = 5709$)</td>
<td>39 (2190)</td>
<td>1 (74)</td>
<td>42 (2406)</td>
<td>6 (352)</td>
<td>12 (687)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Male ($N = 2138$)</td>
<td>27 (576)</td>
<td>3 (73)</td>
<td>52 (1106)</td>
<td>6 (128)</td>
<td>12 (255)</td>
<td></td>
</tr>
<tr>
<td>Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMG ($N = 5966$)</td>
<td>35 (2102)</td>
<td>2 (91)</td>
<td>44 (2633)</td>
<td>6 (341)</td>
<td>13 (799)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>IMG ($N = 1881$)</td>
<td>35 (664)</td>
<td>3 (56)</td>
<td>47 (879)</td>
<td>7 (139)</td>
<td>8 (143)</td>
<td></td>
</tr>
<tr>
<td>Program size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small ($N = 1793$)</td>
<td>36 (654)</td>
<td>3 (56)</td>
<td>39 (705)</td>
<td>9 (166)</td>
<td>12 (212)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Medium ($N = 3576$)</td>
<td>38 (1347)</td>
<td>2 (55)</td>
<td>43 (1553)</td>
<td>6 (210)</td>
<td>11 (411)</td>
<td></td>
</tr>
<tr>
<td>Large ($N = 2478$)</td>
<td>31 (765)</td>
<td>1 (36)</td>
<td>51 (1254)</td>
<td>4 (104)</td>
<td>13 (319)</td>
<td></td>
</tr>
</tbody>
</table>
than their level 2 or 1 counterparts (78% vs 76% vs 70%; $P < .0001$). Program flexibility was perceived by a majority (53%) of residents to consist of choices of subspecialty electives and exposure to diverse patient populations.

The majority (67%) of residents reported that their programs offered a structured mentoring program, although fewer level 3 residents (compared with level 2 and 1 residents) felt this way (60% vs 70%; $P < .0001$), as did fewer women than men (65% vs 70%; $P = .0005$).

**DISCUSSION**

The most important finding from our inquiry regarding choice of residency program was that very few residents identified program flexibility as the most important factor in that choice. Location was the most important factor cited by the greatest number (42%) of residents. Yet, there were significant differences in the most important factor cited among those in programs of different sizes. This result implies that the size of the program influences what each can offer their trainees and that those trainees gravitate to the programs best suited to their needs. For example, larger programs attracted a greater proportion of residents who indicated that program prestige was most important in their choice. In contrast, smaller programs attracted a greater proportion of residents who placed the greatest importance on lifestyle.

The 2 most important findings from our inquiry regarding future career plans were that (1) almost two thirds of residents at all levels had not changed their plans in the previous 12 months and (2) the proportion who planned to pursue subspecialty fellowship training did not vary substantially across the 3 years of training. It also seems from this cross-sectional study that most residents who were undecided in their career choices in the first 2 years of training were most likely to pursue general pediatrics and that structured hours/lifestyle were the most common reasons cited for their choice.

A longitudinal cohort study of internal medicine residents with data collection during each year of their 3-year training program revealed that 62% of residents had changed their career plans during residency. However, 68% of the career plans stated by level 2 residents matched their intentions as level 3 residents. Our study was not longitudinal, so we cannot state with certainty which of the residents in our study had actually changed their plans.

Compared with findings from studies of level 3 residents in 1997, 1998, and 1999 and in 2002 by the American Academy of Pediatrics (AAP), many more residents today at all levels are intending to pursue fellowship training. For example, in 2002 only 27% were planning to pursue fellowship training compared with 47% in our study. At the same time, plans for a generalist career decreased from 62% of level 3 residents in 2002 to 40% in our study, although this is still higher than the 25% of level 3 internal medicine residents in 2004 who intended to pursue generalist careers. However, consistent with previous studies, we found that women and AMGs were more likely to pursue generalist pediatric careers than their male and IMG counterparts.

Of note is that only 3% of residents intended to pursue careers in hospital medicine, with no differences seen in level of training. In contrast, a growing proportion of internal medicine level 3 residents are pursuing such a career, from 1.8% in 2002 to 8.6% in 2004. The difference between the 2 specialties may result from a variety of factors including the relative newness of pediatric hospitalism as a career choice and the greater proportion of hospitalizations among the adult and elderly population creating more demand for these services in adult medicine.

These 2 comparisons with internal medicine highlight the need to approach workforce assessments and planning in a specialty-specific fashion, even among the “primary care” specialties. Specialties differ in workforce size, proportion of generalists and subspecialists in private versus academic practices, salaries, and other characteristics. Studies that fail to differentiate between specialties may miss important distinctions that can have policy or workforce implications.

The need for more flexible residency training, better tailored to career objectives, has been a theme of analyses of residency education from the Future of Pediatric Education I and II projects and now in the Residency Review and Redesign in Pediatrics Project. Yet, when residents were asked whether their program offered enough flexibility to meet the needs of their future career, 78% of level 3 residents answered in the affirmative. One possible reason is that residents do not consider flexibility beyond local options (eg, selection from an existing menu of electives). Another possible reason is that they are not yet fully aware of the breadth or depth of competencies that they will need once they are engaged in either generalist or subspecialty practice.

In this regard, practitioner surveys have consistently identified areas of residency training judged in retrospect to have been inadequate. We surveyed generalists and subspecialists within the first 5 years of practice and found that 91% of generalists and 84% of subspecialists would have configured their residency differently if given the opportunity with 6 to 12 months of flexible time. It is possible, however, that during residency many residents prefer a set, structured curriculum to one in which they have greater responsibility for choosing educational experiences. The apparent contradiction is important and requires further inquiry.

When attempting to assess the importance of factors that affect the decision regarding career choice, residents were asked in previous studies to rate the importance of individual factors. In contrast, we asked residents to choose the most important factor in their decision. The 2 most commonly selected factors in our study (structured hours/lifestyle and interest in a specific disease/patient population) were selected as important by more than 50% in the AAP studies from a list in which there were no limits on the number of choices. Financial considerations and location also figured prominently in the AAP study but were listed as most important in our study by fewer than 6% of all residents. This is not to imply that debt burden and other financial concerns are not important, only that they were not listed as the most important factor in career choice by most residents. This is consistent with the inferences made by Rosenblatt and
Andrilla\textsuperscript{18} in a study that revealed that although higher level of debt seemed to negatively influence career decisions away from primary care, other factors such as gender had more explanatory power in career choice.

We found that lifestyle issues were listed as the most important factor in postresidency career choice by a greater number of level 3 residents than level 1 or 2 residents. This may suggest that, for those undecided early in their training, the experience of residency results in a certain group of residents assigning significant importance to this factor. In contrast, the proportion of residents who stated a specific disease or patient population as the most important factor shows little difference across the years of training, implying maintenance of a focus once it occurs. Our finding that women pediatricians were more likely to place priority on structured hours and lifestyle in career choice was consistent with results from a 2005 study by Harris et al.\textsuperscript{2} As the trend toward a greater proportion of women in the pediatrics workforce continues, such a finding may have important implications for the future practice of pediatrics.

We found that most residents planned to practice in locations with local access to subspecialty care for their patients. This could be due to a variety of factors, including the desire to have assistance in caring for patients with complex conditions, perceptions of the future need for subspecialty assistance similar to that obtained in residency training, or simply the desire to practice in urban/suburban settings. Authors of a recent study also found that graduating pediatrics residents entering general practice were more likely to target their job searches to areas with higher ratios of pediatricians and higher household incomes.\textsuperscript{19}

CONCLUSIONS
Not surprisingly, different priorities motivate pediatricians to pursue specific programs for training and specific career options. The finding that those with the highest priority regarding lifestyle are more likely to pursue generalist training has implications for the generalist workforce, because those persons may also be more likely to seek part-time employment. To ensure a continued flow of residents into fellowship training, especially given the continued gender preponderance of women in pediatrics, lifestyle concerns may need to be addressed in subspecialty training and subsequent subspecialty careers.

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REFERENCES
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