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Pediatrics 2006;118;1104
DOI: 10.1542/peds.2006-0042

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Comparing Perceptions of Training for Medicine-Pediatrics and Categorically Trained Physicians

Gary L. Freed, MD, MPH, and the Research Advisory Committee of the American Board of Pediatrics

Child Health Evaluation and Research Unit, Division of General Pediatrics, and Department of Health Management and Policy, University of Michigan, Ann Arbor, Michigan

The authors have indicated they have no financial relationships relevant to this article to disclose.

ABSTRACT

OBJECTIVE. The objective of this study was to compare the perceptions of clinical preparedness among graduates of categorical pediatric and internal medicine residency programs versus medicine-pediatrics training programs and whether these varied for recent or older graduates.

METHODS. A mail survey study was conducted in the fall of 2004 of a random sample of 245 and 246 internal medicine physicians who applied for or took a general certifying examination between 1980 and 1997 (older graduates) and between 1998 and 2003 (recent graduates), respectively, and a random sample of 248 and 247 pediatricians who applied for or took a general certifying examination between 1980 and 1997 (older graduates) and between 1998 and 2003 (recent graduates). Analyses compared results from a recent, similar survey of medicine-pediatrics physicians.

RESULTS. Response rate for pediatricians was 78% and for internal medicine physicians was 64%. Categorically trained pediatricians were more likely than medicine-pediatrics–trained physicians to report that they were very well prepared to care for infants (65% vs 50%) but less likely well trained to care for adolescents (17% vs 45%). Categorically trained internal medicine residents were less likely to feel very well prepared to care for both adults and elders than their medicine-pediatrics–trained counterparts.

CONCLUSIONS. Categorically trained pediatricians and internal medicine physicians believed that they were no better prepared to care for their patients than medicine-pediatrics–trained physicians. Regardless of their beliefs of their preparedness, medicine-pediatrics physicians in practice spend a significant majority of their time in the care of adults rather than children. Our findings indicate that this is not because of their perception of a lack of training or preparation in the care of children relative to categorically trained pediatricians. Other factors, including but not limited to patient demographic changes, reimbursement for care, and the job market, potentially play a significant role.
METHODS
In the fall of 2004, the American Board of Internal Medicine provided a random sample of 245 individuals who applied for or took a general certifying examination between 1980 and 1997 (older graduates) and 246 individuals who applied for or took a certifying examination between 1998 and 2003 (recent graduates). Also in the fall of 2004, the American Board of Pediatrics provided a random sample of 248 individuals who applied for or took a general certifying examination between 1980 and 1997 (older graduates) and 247 individuals who applied for or took a certifying examination between 1998 and 2003 (recent graduates).

Survey Instrument
Two survey instruments were developed, 1 each for internal medicine and pediatric physicians. The instruments were designed to obtain responses that could be compared with the findings of the recent study that assessed the self-perceptions of the preparedness of internal medicine–pediatrics program graduates to care for adults and children. As such, these questions were replicated, word for word, from the previous study. Therefore, the primary outcome variables of interest were the physician self-perceptions of preparedness to care for either adults or children in specific age ranges. For example, for pediatricians, respondents were asked to note on a 4-point Likert scale how well their residency program prepared them to care for children who are younger than 1 year, 2 to 11 years of age, and 12 to 18 years of age. For internal medicine physicians, age ranges were 19 to 64 years and ≥65 years.

Additional questions requested information regarding the proportion of clinical time that was spent in the care of patients in these age ranges. Other items queried respondents about their employment status (full or part time); division of time allocation among clinical care, research, teaching, and administration; and the holding of any type of faculty appointment. Again, all wording used for these questions was exactly the same as that used for the previous study of medicine–pediatrics program graduates. Both questionnaires were composed of questions with a mixture of fixed-choice, Likert-scale, and open-ended responses.

Survey Administration
Surveys were sent via express mail accompanied by a personalized cover letter to the 491 internal medicine physicians and the 495 pediatricians whose names and addresses were provided by their respective boards. Two additional mailings were sent via first class mail to nonrespondents. A 5-dollar bill was included in the first mailing as an incentive to complete the questionnaire. The single-page survey was designed so that it could be folded over for return via business mail reply.

Data Analysis
Analyses were conducted separately for each specialty. First, frequency distributions of all survey items were calculated for respondents. Next, comparisons were made between the responses of those who completed training between 1980 and 1997 (older graduates) and those who completed training between 1998 and 2003 (recent graduates). Subsequently, χ² statistics were used to determine the presence of any associations between the outcome variable (self-perception of preparedness for providing care to any of the patient age groups) with the predictor variables.

Finally, comparisons were made between the findings from the previous study of medicine–pediatrics graduates and the new data from the categorically trained graduates. Specifically, self-perceptions of the medicine–pediatric program graduates regarding the adequacy of their preparedness to provide care to the pediatric age groups was compared with those from the categorically trained graduates.
trained pediatricians. The same comparisons for the adult ages were made for categorically trained internists versus those with medicine-pediatrics training. Comparisons were made between those in each training program who considered themselves “very well trained” to care for patients (selecting 4 on a 4-point Likert scale) in the age groupings of interest: infants (0–1 year), children (2–11 years), adolescents (12–18 years), adults (19–64 years), and elders (≥65 years). The project was approved by the Institutional Review Board for the Protection of Human Subjects at the University of Michigan.

RESULTS

Response Rate

Pediatricians
Of the initial 495 surveys that were mailed to pediatricians, 27 were returned as undeliverable by the US postal service. Of the remaining 468 potential respondents, responses were received from 367, yielding an overall response rate of 78%. Of these, 28 respondents were retired, not engaged in patient care, or otherwise ineligible for the study, leaving 339 respondents for analysis.

Internal Medicine Physicians
Of the initial 491 surveys that were mailed to internal medicine physicians, 60 were returned as undeliverable. Of the remaining 431, responses were received from 276, yielding an overall response rate of 64%. Of these, 19 respondents were not practicing, not engaged in patient care, or otherwise ineligible for the study, leaving 257 respondents for analysis.

Categorically Trained Residency Graduates

Pediatricians
Overall, 65% of pediatricians reported that they believed that they were very well trained during residency to care for infants who are 0 to 1 year of age, 47% believed that they were very well trained to care for children who are 2 to 11 years of age, and 17% believed that they were very well trained to care for adolescents who are 12 to 18 years. The only difference between the older and more recent graduates of training programs was that the more recent graduates were more likely to believe that they were very well trained in the care of infants who are 0 to 1 year (74% vs 56%; \(P = .001\)). The vast majority of respondents spent the bulk of their professional time in clinical care; fewer than 5% devoted >5% of their total professional time to other activities (eg, research, teaching, administration). Other characteristics of these pediatricians are found in Table 1.

Internal Medicine Physicians
Overall, 44% of internists believed that they were very well trained during residency to care for adults who are aged 19 to 64, and 40% believed that they were very well trained to care for elders who are ≥65 years of age. No differences were found when older and more recent graduates of training programs were compared. The vast majority of respondents spent the greater part of their professional time in clinical care; only 18% spent a total of ≥20% of their time in other activities (eg, research, teaching, administration). Other characteristics of these internal medicine physicians are found in Table 2.

Comparing Perceptions Regarding Training Between Medicine-Pediatrics and Categorical Program Graduates

Pediatricians
As shown in Table 3, categorically trained residents were more likely than medicine-pediatrics–trained residents to report that they were very well prepared to care for infants (65% vs 50%) but much less likely that they were well trained to care for adolescents (17% vs 45%).

Internal Medicine Physicians
As shown in Table 4, categorically trained residents were less likely to feel very well prepared to care for both adults and elders than their medicine-pediatrics–trained counterparts.

DISCUSSION

Comparing results of this study of categorically trained pediatric and internal medicine residents with the results from our previous study of medicine-pediatrics–trained
residents demonstrates that the only age group in which medicine-pediatrics–trained physicians feel less well prepared to provide care was that of infants who are aged 0 to 1 year. For patients in all other age groups, medicine-pediatrics–trained physicians were more likely to believe that they were very well prepared by their residency training to provide care than were the categorically trained residents.

This pattern was most pronounced for the care of patients in the adolescent age group. Although not surprising given the mission of medicine-pediatrics to care for patients across the age spectrum, the degree of difference in perception of being very well trained between the categorically trained and medicine-pediatrics–trained physicians was striking. Such findings highlight specific potential deficiencies in the training of categorical pediatric residents.

It is important to note that these studies measured only self-perceived preparedness to care for patients. No data were collected to assess the quality of care provided, and board scores were not available for use in this study. Just because one believes that he or she was trained adequately does not mean that such training actually occurred. However, these studies were conducted among physicians who already were in practice. Therefore, they would have the ability to assess their training from a “real world” perspective, lending a greater degree of relevance to their views than those of physicians who were in or just completing training. However, 1 additional limitation may be that the older graduates are unable to recall with accuracy the adequacy of their training experience.

We cannot state with any certainty why medicine-pediatrics–trained physicians believe that they are better trained to care for patients in most age groups than categorically trained physicians. There may be a unique type of person who seeks such training or unique factors in the selection process itself. Although it seems counterintuitive that these residents would spend less time training in each specialty yet believe that they were better trained, likely the synergy between the training experiences across specialties plays some type of role. Another possibility is that their training provides a greater ability to “bridge the gap” between pediatric and adult medicine, thus their greater comfort in the care of adolescents.

The assessment of training of internal medicine–pediatric graduates has been an issue of interest for several years. However, most previous research has been generated from reports of programs directors, not from the graduates of the programs themselves. As such, these studies have significant limitations in their ability to shed light on the actual perceptions and activities of those who have completed such training. Also, questions often were not specific enough to discern actual proportions of care provided between adult and pediatric patients. For example, the most recent survey of program directors, conducted in 2003, found that 82% of graduates from 1998 to 2002 were providing care to both adults and children. However, there was no delineation of how much care was provided to each age group.

Lannon et al completed the most recent survey of internal medicine–pediatric graduates in 1995 and reported results in 1999. This study found that only 4% of those who completed training from 1985 to 1995 provided no care to children who are younger than 10 years. Our more recent study provided greater detail regarding the age breakdown of the patient populations who are cared for by internal medicine–pediatric graduates, including that 14% provide no care to children who are younger than 1 year and that 12% provide no care to children who are 2 to 11 years of age. A smaller proportion provides no care to adolescents (8%), adults (9%), or seniors (11%). Furthermore, the proportion of care that was provided to different age groups, among those who care for patients across the age spectrum, was skewed toward greater care for adult patients.

Regardless of their beliefs of their preparedness, medicine-pediatrics–trained physicians in practice spend a significant majority of their time in the care of adults, rather than children. At this point, we believe that this is not attributable to a lack of training or preparation in the care of children. Other factors, including but not limited to patient demographic changes, reimbursement for care, and the job market, potentially play a significant role. For example, as the average age of the US population continues to get older, a greater proportion of patients are adults and seniors. It would be consistent, then, that a greater proportion of the patient panels of physicians who provide care across the life span would be adults. Similar trends have been found among family physician patient panels in the past decade. Additional analysis is needed to determine how to ensure that the

### Table 3

**Comparison of Self-Perceptions of Pediatric Training Received During Residency (% Reporting That They Were Very Well Prepared)**

<table>
<thead>
<tr>
<th>Type of Training Program</th>
<th>0–1 Care of Infants 0–1 y, %</th>
<th>2–11 Care of Children 2–11 y, %</th>
<th>12–18 Care of Adolescents 12–18 y, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatrics</td>
<td>65</td>
<td>47</td>
<td>17</td>
</tr>
<tr>
<td>Medicine-pediatrics</td>
<td>50</td>
<td>52</td>
<td>45</td>
</tr>
</tbody>
</table>

### Table 4

**Comparison of Self-Perceptions of Internal Medicine Training Received During Residency (% Reporting That They Were Very Well Prepared)**

<table>
<thead>
<tr>
<th>Type of Training Program</th>
<th>Care of Adults 19–64 y, %</th>
<th>Care of Elders ≥65 y, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal medicine</td>
<td>44</td>
<td>40</td>
</tr>
<tr>
<td>Medicine-pediatrics</td>
<td>72</td>
<td>56</td>
</tr>
</tbody>
</table>
public receives the maximum benefit from the unique and valuable training that is provided by medicine-pediatrics programs in the care of patients across the age spectrum.

**ACKNOWLEDGMENTS**

This study was funded by the American Board of Pediatrics Foundation.

Members of the Research Advisory Committee of the American Board of Pediatrics are as follows: Linda Althouse, PhD, William Balistreri, MD, Thomas Boat, MD, Russell Chesney, MD, Gary Freed, MD, MPH, Hazen Ham, PhD, George Lister, MD, Gail McGuinness, MD, Julia McMillan, MD, Paul Miles, MD, Jean Robillard, MD, James Stockman, MD, and Michelle Wall.

**REFERENCES**


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**UV TANNING ADVERTISEMENTS IN HIGH SCHOOL NEWSPAPERS**

**Objective:** To examine the increasing use of UV tanning parlors by adolescents, despite the World Health Organization recommendation that no one under the age of 18 years use UV tanning devices.

**Design:** We examined tanning advertisements in a sample of public high school newspapers published between 2001 and 2005 in 3 Colorado counties encompassing the Denver metropolitan area.

**Results:** Tanning advertisements appeared in newspapers from 11 (48%) of 23 schools. Newspaper issues (N=131) contained 40 advertisements placed by 18 tanning parlors. Advertisements commonly offered discounts (19 of 40) including unlimited tanning offers (13 of 40). Thirteen advertisements featured non-UV tanning treatments, and 2 advertisements mentioned parental consent or accompaniment for UV tanning.

**Conclusions:** UV radiation, a classified carcinogen, is commonly and specifically marketed to adolescents through high school newspaper advertising. Public health skin cancer prevention policies should include the prohibition of UV tanning advertising to minors.”

Freeman S, Francis S, Lundahl K, Bowland T, Dellavalle RP. *Arch Dermatol.* 2006;142:460-462

Noted by JFL, MD