



## Factors Influencing Community Pediatrics Training in Residency

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Increasingly, pediatricians are expected to work collaboratively within their communities to address the complex environmental and social issues affecting children's well-being.<sup>1</sup> The American Academy of Pediatrics identifies community pediatrics as "an integral part of the professional role and duty of the pediatrician."<sup>2</sup> Residency training is perceived as an opportune time in which to equip pediatricians with the necessary skills to advocate effectively for children in their communities.<sup>3-6</sup> Since 1997, pediatric residency programs have been required to provide structured educational opportunities, both didactic and experiential, in the areas of community pediatrics and child advocacy.<sup>7</sup>

Most pediatric residency programs do provide community experiences for residents, with more than two thirds of programs in 2002 requiring involvement in four or more community settings as well as teaching about issues such as cultural competency, and the mental health and social service systems.<sup>8</sup> Nonetheless, there is considerable variability in curricular offerings. Prior reports have suggested that resident interest,<sup>9,4</sup> faculty involvement,<sup>3,4</sup> and the commitments of academic and community organizations<sup>3,4,10</sup> are instrumental in implementing community pediatrics curricula in residency training programs. Yet, there has been no systematic assessment of the factors that influence the ability of residency programs to implement community training.

### METHODS

To address these issues, we conducted a Web-based survey of pediatric residency program directors between May and July 2005. The American Medical Association's Fellowship and Residency Electronic Interactive Database provided contact information.<sup>11</sup> The 11-item survey asked about program identification, designation of having a primary care track, and continuity clinic settings. Respon-

dents indicated required or elective resident involvement in 15 community settings (eg, Head Start program) and whether their programs provided education regarding 14 community health topics (as didactic or practical instruction). Respondents also reported the level of resident involvement (4-point Likert scale, 1 "not at all" to 4 "heavily") in five additional activities: communicating with elected officials; providing legislative testimony; participating in longitudinal community projects; conducting research in the community; and addressing parents, teachers, or other community groups. Using a similar Likert scale, respondents reported on the degree to which the program emphasized resources and training related to 11 content areas (eg, child advocacy) in marketing the program to prospective residents.

We developed a community orientation scale using responses to a question asking "In the last 3 years, to what degree have the following factors influenced your ability to offer residency training experiences in community child health?" The scale included eight factors: community interest, faculty expertise and interest, departmental priorities, resident interest, institutional initiatives, implementation of a competency-based curriculum, and resources and money (Table I). For each program, the community orientation score was calculated as the mean rating for all eight factors, with higher scores indicating a more positive orientation to community pediatrics.

Data analysis was conducted using the Statistical Package for the Social Sciences version 11.5 (SPSS, Inc., Chicago, Ill) using non-parametric tests to allow for non-normal distribution of responses. Mean scores are reported for ease of interpretation. The Johns Hopkins Committee on Human Research approved the study.

### RESULTS

Of the 203 accredited programs, 161 program directors or their designees completed the survey (response rate = 79%). All but 12 respondents completed the question regarding factors influencing community pediatrics training with a resulting analytic sample of 149. The degree to which selected factors positively influence a program's ability to offer residency training experiences in community child health ("community orientation") varied, with work

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**Table I. Factors influencing community pediatrics (n = 149)\***

Factor	Mean	SD
Community interest	3.95	0.90
Faculty expertise	3.94	1.01
Faculty interest	3.93	1.08
Departmental priorities	3.83	1.08
Resident interest	3.72	1.07
Institutional initiatives	3.54	0.90
Implementing a competency-based curriculum	3.47	0.96
Resources and money	2.49	1.19
Work hours restrictions†	2.41	0.94

Note: A community-orientation score was created for each program using the sum of responses from the 8 factors/ total number of items (higher score = more positive orientation to community pediatrics). The Cronbach  $\alpha$  reliability coefficient for the 8-item community-orientation scale (sum of items/8) was 0.83, indicating high internal consistency. The scale range was 1.75 to 4.88 with a mean score of 3.61 (SD 0.69).

\*Respondents identified the degree of influence (Likert scale, 1 "very negative" to 5 "very positive").

†Excluded in 8-item scale. All other factors were highly correlated ( $P < .05$ ).

hours restrictions having the lowest score (2.41) and community interest having the highest (3.95) (Table I).

Using scaled scores, there were no differences in community orientation by program size or presence of a primary care track. However, those programs offering community health centers as one of the possible continuity clinic sites reported greater community orientation (mean 3.77 vs 3.45,  $P = .004$ ). Among sites receiving support from the Dyson Community Pediatrics Training Initiative (\$500,000/year for each of 5 years to support training in community pediatrics), mean scores regarding the importance of resources and money were substantially higher than for their counterparts without Dyson support (3.83 vs 2.37,  $P < .001$ ), as were overall scores on community orientation (4.31 vs 3.55,  $P < .001$ ).

Greater community orientation was reported by programs with more required community settings, with scores of 3.38 for programs requiring fewer than four settings, 3.67 for four to six settings, and 3.80 for programs requiring seven or more settings ( $P = .006$ ). Greater community orientation also was associated with more didactic training in 5 of the 14 topics and more practical experiences in 3 of the 14 topics (Table II; available at [www.jpeds.com](http://www.jpeds.com)). Greater community orientation was reported by programs with more involvement of residents in the five selected community activities (Table III; available at [www.jpeds.com](http://www.jpeds.com)).

Community orientation also was associated with how programs market themselves to prospective residents. In particular, higher community orientation scores were reported by programs that emphasized their resources and training related to primary care, behavior and development, community pediatrics, and advocacy but not to other areas such as breadth of specialty services, clinical and lab research, or intensive care.

## DISCUSSION

These findings suggest that multiple factors influence the ability of pediatric residency programs to offer training experiences related to community child health and that many of these factors are mutable. Across all programs, both resources and money and work hours restrictions negatively impacted training, whereas all other factors exerted a positive influence. However, among programs receiving significant financial support for community pediatrics training, resources and money were viewed positively; such resources can be used to support training provided by community partners, faculty development, and coordinators responsible for scheduling resident activities in community settings.

Although work hours restrictions influenced programs' abilities to offer community health training, these restrictions did not correlate with the other factors that describe community orientation. It is likely that respondents perceived the impact of work hours restrictions for community child health training to be comparable to its impact on other training opportunities, and not unique to community pediatrics. In a separate question asking respondents about the influence of work hours on their ability to offer training experiences related to the care of hospitalized patients, scores for the impact of work hours restrictions were comparable to those for community pediatrics.

This brief report offers a glimpse into the factors that influence the ability of programs to offer community pediatrics training experiences. Clearly, more work is needed to understand the role of other factors that may be important and to understand the full scope and quality of these experiences. However, this study does demonstrate a positive orientation to community pediatrics training when there is institutional support as well as community, faculty, and resident interest. Pediatrics departments that are interested in revising curricular opportunities related to community pediatrics should assess the varied factors that likely influence their programs' abilities to support these efforts. This information also may be important in informing the Residency Review and Redesign Project of the American Board of Pediatrics as it looks to how the future of pediatric residency training should be structured to meet the evolving healthcare needs of children.

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*References available at [www.jpeds.com](http://www.jpeds.com).*

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**Table II. Community orientation and health system topics, mean (SD) (n = 149)\***

Community health system topic	Didactic training			Practical experience		
	Yes	No	P value	Yes	No	P value
Social service system	3.66 (0.69)	3.42 (0.66)	.08	3.64 (0.69)	3.49 (0.69)	.34
Welfare system	3.76 (0.64)	3.44 (0.70)	.003	3.64 (0.67)	3.56 (0.72)	.58
Foster care system	3.74 (0.61)	3.46 (0.74)	.02	3.66 (0.64)	3.53 (0.76)	.47
Public education system	3.70 (0.69)	3.52 (0.68)	.13	3.67 (0.67)	3.44 (0.71)	.06
Juvenile justice system	3.68 (0.68)	3.55 (0.69)	.35	3.61 (0.62)	3.59 (0.76)	.92
Mental health system for children/adolescents	3.65 (0.67)	3.29 (0.80)	.14	3.63 (0.71)	3.56 (0.58)	.44
Substance abuse treatment	3.63 (0.66)	3.51 (0.82)	.72	3.64 (0.66)	3.56 (0.74)	.67
Managed care	3.63 (0.69)	3.54 (0.68)	.56	3.65 (0.69)	3.51 (0.69)	.24
Healthcare financing	3.66 (0.69)	3.38 (0.63)	.05	3.69 (0.72)	3.51 (0.65)	.09
Cultural competency	3.69 (0.65)	3.17 (0.74)	.007	3.66 (0.69)	3.32 (0.64)	.03
Legislative advocacy	3.75 (0.62)	3.33 (0.75)	.002	3.75 (0.59)	3.45 (0.77)	.02
Migrant healthcare	3.96 (0.66)	3.56 (0.68)	.022	3.94 (0.65)	3.56 (0.69)	.03
Indian Health Service	3.80 (0.63)	3.59 (0.69)	.27	3.61 (0.82)	3.61 (0.69)	.74
Children with special healthcare needs	3.63 (0.67)	3.32 (0.92)	.41	3.62 (0.69)	3.46 (0.69)	.46

\*Higher community-orientation scores reflect greater community orientation. Significance testing reported using Mann-Whitney tests.

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**Table III. Community orientation and resident activities (n = 149), mean (SD)\***

Activity	Degree of involvement				P value
	Not at all	Somewhat	Moderately	Heavily	
Communicated with elected officials to advocate on behalf of children's concerns	3.36 (0.77)	3.62 (0.62)	3.98 (0.55)	3.75 (0.83)	.004
Provided legislative testimony	3.49 (0.72)	3.92 (0.46)	3.84 (0.78)	4.0 (—)	.01
Participated on a longitudinal project providing services in the community	3.31 (0.78)	3.41 (0.64)	3.88 (0.56)	4.00 (0.55)	<.001
Conducted research in the community	3.23 (0.78)	3.57 (0.61)	4.00 (0.55)	4.19 (0.55)	<.001
Address parents, teachers, or other community groups	3.30 (0.99)	3.40 (0.69)	3.69 (0.58)	4.14 (0.40)	<.001

\*Higher community-orientation scores reflect greater community orientation. Significance testing reported using Kruskal-Wallis tests.