

Community Pediatrics: Gender Differences in Perspectives of Residents

Cynthia S. Minkovitz, MD, MPP; Anita Chandra, DrPH;
Barry S. Solomon, MD, MPH; Karen A. McDonnell, PhD;
Gillian B. Silver, MPH; Thomas F. Tonniges, MD

Objective.—The Future of Pediatric Education II Report affirmed the importance of providing resident education in community settings. Yet we know little about related experiences of trainees and whether experiences and perspectives regarding community involvement vary by gender. We assessed gender differences in pediatric residents' involvement in and perspectives regarding community activities.

Methods.—A national survey of US pediatric residents assessed residents' involvement in 14 activities before medical school and the intensity and perceived importance of involvement in 17 activities during medical school and residency. Expected future involvement 10 years hence was assessed for 11 community settings. χ^2 and analysis of variance were used to examine bivariate relations by gender. Multivariate linear regression was used to model the relationship between gender and expected future involvement.

Results.—Of the 700 respondents, 68% were women. Relative to

men, more women reported exposure to child health advocacy and other community activities before and during medical school. Women and men reported similar involvement in residency, although women placed greater importance on inclusion of 16 of 17 community activities in their training. Female residents were more likely to report that current training in the community would influence their future career activities. Women anticipated greater future involvement in 6 of 11 settings. In adjusted analyses, gender remained associated with future involvement in 5 settings.

Conclusions.—As women come to comprise an increasing proportion of the pediatric workforce, further efforts are needed to understand the impact of gender on future involvement in community child health activities.

KEY WORDS: community pediatrics; gender; residency training

Ambulatory Pediatrics 2006;6:326–331

A renewed commitment to meeting the “health needs of children in the context of their families and communities” has contributed to interest in incorporating community child health activities into pediatric residency training.¹ Consistent with the 1997 pediatric residency review commission requirements,² the Future of Pediatric Education II (FOPE II) report emphasized the need to provide education in community settings.³ As such, residency training is expected to equip future generalists and specialists with skills and knowledge to promote children's health at both the individual and population level.⁴

In a recent survey of pediatric residency program direc-

tors, most reported exposure to community settings and education on various community health topics.⁵ However, the views of program directors may not reflect the actual experiences of trainees. Little is known about the perceived importance residents place on community child health training, the extent of prior and current involvement and whether gender is associated with prior exposure and expected future involvement.

Gender has been associated with decisions regarding specialty choice,^{6,7} practice settings,⁸ and part-time employment.⁹ Female gender generally has been associated with social connectedness,¹⁰ membership in school service groups,¹¹ and overall civic participation.¹² Although women's increasing participation in the paid labor force provides more opportunity for civic engagement, it allows less time to pursue such activities.¹⁰

Other factors are likely to influence pediatric residents' expectations for future community involvement. Previous efforts examining pediatrician involvement emphasize the link between early exposure and future community involvement.^{13,14} In addition to interests before medical school,¹⁵ residency education,^{13,16} support of peers and faculty,¹⁶ mentors,^{16,17} and debt^{18–22} also influence career paths.

In this study, we examine past, present and expected future community involvement among pediatric residents. Because women constitute 70% of pediatric trainees,²³ we assess whether gender is associated with involvement in and perspectives regarding community child health.

From the Department of Population, Family and Reproductive Health Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, Md (Dr Minkovitz); Department of Pediatrics, Johns Hopkins University School of Medicine, Baltimore, Md (Drs Minkovitz and Solomon); RAND, Fairfax, Va (Dr Chandra); Maternal and Child Health Program, George Washington University School of Public Health and Health Services, Washington, DC (Dr McDonnell); Association of Schools of Public Health, Washington, DC (Ms Silver); and Boys Town National Research Hospital, Omaha, Neb (Dr Tonniges).

Presented in part at the Pediatric Academic Societies' Annual Meeting, Baltimore, Md, May 6, 2003.

Address correspondence to Cynthia Minkovitz, MD, MPP, Department of Population, Family and Reproductive Health Sciences, Johns Hopkins Bloomberg School of Public Health, 615 North Wolfe Street, E4636, Baltimore, MD 21205 (e-mail: cminkovi@jhsph.edu).

Received for publication October 5, 2004; accepted July 29, 2006.

METHODS

A cross-sectional study design was used.

Participants

A national random sample of pediatric residents was drawn from the American Medical Association (AMA) Physician Masterfile. The Masterfile contains data on all United States physicians and includes address, gender, birth date, year of training, and residency program for trainees.²⁴

The study, fielded December 2001 to April 2002, included pediatric categorical residents with expected residency completion between 2002 and 2004. Starting with a sample of 6023 pediatric residents, 1082 were excluded—739 for incomplete addresses and 343 for training at a residency program participating in the Dyson Community Pediatrics Training Initiative. Residents at these 6 sites were exposed to intensive community pediatrics curricula.

Sampling

Within each year of training, a computer-generated random number was assigned to each individual. Data sets were sorted by random number within each of the 3 residency years and the first 570 names were selected. A list of alternate names was used to replace trainees with incomplete contact information.

Data Collection

Surveys were mailed to 1710 pediatric residents (570 per year of residency). Up to 4 mailings were sent. The first mailing included a Blockbuster™ movie card. Some surveys (214) were undeliverable (forwarding addresses unknown) and were replaced with additionally sampled names based on year of residency.

National Resident Survey

The national resident survey asked about community involvement before and during medical school, during residency, and expected involvement in 10 years. Survey content was informed by literature reviews, related American Academy of Pediatrics (AAP) periodic surveys and the AAP Survey of Third Year Residents, the Association of American Medical Colleges Graduate Medical Student Questionnaire, and a review of qualitative data collected as part of the Dyson Initiative National Evaluation (DINE). Content validity was assessed by DINE Advisory Committee review and feedback from select residency faculty at the 6 Dyson sites and a focus group of 5 pediatric residents not eligible to participate. No previous national surveys included in-depth questions regarding trainees' activities in community settings.

Variables

Sociodemographic Characteristics

Information included gender, age, race/ethnicity and debt. Respondents were asked whether they had outstanding loans for undergraduate or medical school education. Any debt (undergraduate and/or medical school) was used

in further analyses because 13% of respondents with debt did not report the amount.

Education/Training

Year of training and international medical graduate status were identified. Residency program size was determined from review of the AMA Fellowship and Residency Interactive Electronic Database (FRIEDA)²⁵ and categorized as small (≤ 30 residents), medium (31–50), or large (≥ 51). Residents reported whether they had a source of guidance and advice for community pediatrics.

Community Experience

Respondents indicated whether they had any involvement in 9 community settings and 5 community activities before medical school. They reported levels of involvement in 11 settings and 6 additional activities during medical school and residency. Involvement during residency was reported by second- and third-year residents because first-year residents had only been training for approximately 6 months at the time of the survey. Intensity of involvement was rated as none, 1 to 7 days, 8 to 30 days, or more than 30 days. Responses were grouped to combine involvement of 8 to 30 and more than 30 days. Expected future involvement in 10 years was assessed on a 4-point Likert scale from 1 "not at all" to 4 "substantial" for providing services at or consultation to 8 community organizations and for 3 other activities (serving on a community board, providing legislative testimony, and lobbying legislators).

Perspectives

Respondents rated the importance ("none" to "very" on a 4-point Likert scale) that their pediatric training include involvement in 11 community settings and 6 additional community activities. Residents also indicated to what degree the scope and intensity of training in the community received during residency was likely to influence their future activities; this was assessed with a 4-point Likert scale ("not at all" to "substantial") with responses categorized and later collapsed to moderate/substantial versus limited/none.

Respondents identified current benefits and constraints they experience regarding their involvement in community child health. Benefits included money/compensation, professional recognition, spending time with like-minded peers, gaining valuable skills and/or knowledge, meeting academic requirements, personal satisfaction, and peer support. Constraints included lost time for personal/leisure, lost time for generating revenue, lost time for research, lack of interest, lack of opportunities, limited skills, concerns about personal safety, and logistics/scheduling difficulties. Benefits and constraints were individually assessed and mean numbers of each reported.

Statistical Analyses

Chi-square statistics were used to examine bivariate relations between respondents and nonrespondents, between gender and individual benefits and constraints, and

between gender and experiences in community activities before medical school. Analysis of variance (ANOVA) was used to examine gender differences in the mean numbers of benefits and constraints, mean level of involvement in community activities during medical school and residency, anticipated future involvement, and perceived importance of inclusion of community activities in their training.

Separate multivariate linear regression models were constructed to assess associations of gender with anticipated future involvement in each of the 8 community settings for which data were collected regarding both previous and future involvement. Independent variables were included if they were associated by ANOVA ($P < .05$) with future involvement in 2 or more of the 8 settings. Models adjusted for underrepresented minority status, year of training, the number of current benefits associated with community involvement, involvement in the specific activity before and during medical school, size of residency program, and presence of a source of guidance and advice for community pediatrics. Analyses were conducted by SPSS version 11.5 (SPSS Inc, Chicago, Ill).

Human Subjects

This study was approved by the Committee on Human Research at Johns Hopkins Bloomberg School of Public Health.

RESULTS

Of the 712 respondents, 12 were no longer residents and were excluded for a final sample of 700. Cumulative response rates from each of the 4 mailings were 29%, 37%, 40%, and 43% with no variation by year of training. Nonrespondents were similar to respondents with regard to year of training, mean age, and gender ($P > .05$). Resident characteristics were similar to those reported by the American Board of Pediatrics with regard to year of training and gender.²³ However, a smaller proportion of respondents relative to their national peers were international medical graduates (9.7% vs 20.2%; $P < .001$). Most residents reported having debt with a mean of \$121,395 (SD = \$47,951) (Table 1).

Involvement in Community Activities Before Medical School

Schools and tutoring/mentoring were most commonly identified settings for involvement (paid or volunteer) before medical school (Table 2). A greater percentage of female than male respondents were involved in day care centers (26% vs 12%; $P < .001$), served as committee members for local or national organizations (31% vs 20%; $P = .003$) and worked on advocacy related to child health (17% vs 11%; $P = .029$). A larger percentage of male than female respondents coached a sports team before medical school (27% vs 16%; $P = .001$).

Involvement in Community Activities During Medical School

During medical school, respondents reported the highest levels of involvement (8 or more days) in community

Table 1. Respondent Characteristics (n = 700)*

Characteristic	No.	%
Sociodemographic characteristics		
Gender		
Female	427	67.4
Male	228	32.6
Mean age, years (SD)	29.71 (3.35)	-
Race/ethnicity†		
Caucasian	459	66.7
Asian American	56	8.1
Asian	50	7.3
European	46	6.7
Hispanic/Latino	38	5.5
African American	23	3.3
Indian	21	3.1
Other‡	25	3.6
Underrepresented minority§		
Yes	62	8.9
No	638	91.1
Debt		
Undergraduate	204	29.9
Medical school	527	75.9
Education/Training		
International medical graduate		
Yes	65	9.7
No	607	90.3
Year of training		
PL 1	237	33.9
PL 2	224	32.0
PL 3	239	34.1
Size of residency program		
Small (≤ 30 residents)	154	22.0
Medium (31–50 residents)	267	38.1
Large (≥ 51 residents)	279	39.9
Source of guidance and advice for community pediatrics		
Yes	548	79.4
No	142	20.6

*Missing data less than 2% except gender (6% missing gender in AMA Masterfile) and international medical graduate (4%).

†Categories are not mutually exclusive.

‡Includes Native American, African, and/or other.

§Includes African American, Native American, and/or Hispanic/Latino.

health centers and schools and serving as a committee member for a medical, local, or national organization. As reported on a Likert scale from 1 (none) to 4 (≥ 30 days), women reported greater participation with community health centers (mean 2.17 vs 1.96, $P = .016$), advocacy efforts related to child health (1.86 vs 1.62, $P = .002$), and serving as a committee member for a medical school, local, or national organization (2.56 vs 2.23, $P = .002$). Men reported greater participation in coaching sports teams during medical school (1.32 vs 1.12, $P < .001$).

Involvement in Community Activities During Residency

Among second- and third-year residents, settings with the highest levels of involvement during residency were the same as those reported for medical school. There were no significant gender differences with respect to extent of participation in community activities during residency or the presence of a source of guidance or advice regarding

Table 2. Involvement in Community Activities Before Medical School, During Medical School, and During Residency*

Activities	Involvement Before Medical School, n (%)	Involvement During Medical School, n (%)			Involvement During Residency, n (%)†		
		None	1–7 days	≥8 days	None	1–7 days	≥8 days
Setting							
School	462 (66.1)	264 (38.8)	237 (34.9)	179 (26.3)	191 (41.8)	197 (43.1)	69 (15.1)
Day care center‡	147 (21.0)	575 (84.3)	82 (12.0)	25 (3.7)	264 (58.1)	175 (38.5)	15 (3.3)
Head Start program	40 (5.7)	614 (90.4)	50 (7.4)	15 (2.2)	321 (70.9)	121 (26.7)	11 (2.4)
Juvenile justice program	22 (3.1)	591 (87.7)	69 (10.2)	14 (2.1)	307 (67.6)	104 (22.9)	43 (9.5)
Shelter	196 (28.0)	418 (61.3)	163 (23.9)	101 (14.8)	321 (71.7)	100 (22.3)	27 (6.0)
Community health center§	176 (25.2)	267 (39.2)	177 (26.0)	237 (34.8)	155 (33.8)	124 (27.0)	180 (39.2)
Local or state health department	58 (8.3)	487 (71.6)	131 (19.3)	62 (9.1)	276 (61.1)	129 (28.5)	47 (10.4)
Camp for children with special needs	130 (18.6)	547 (80.3)	65 (9.5)	69 (10.1)	347 (76.4)	79 (17.4)	28 (6.2)
Indian Health Service	13 (1.9)	633 (93.4)	19 (2.8)	26 (3.8)	444 (96.7)	7 (1.5)	8 (1.7)
Home visiting	NA	326 (48.2)	301 (44.5)	50 (7.4)	264 (57.5)	175 (38.1)	20 (4.4)
International health experience	NA	493 (72.2)	27 (4.0)	163 (23.9)	389 (84.7)	25 (5.4)	45 (9.8)
Other community involvement							
Committee member for medical school or local or national organization‡§	191 (27.3)	266 (39.4)	72 (10.7)	337 (49.9)	294 (64.2)	63 (13.8)	101 (22.1)
Community research	82 (11.7)	457 (67.7)	61 (9.0)	157 (23.3)	346 (75.4)	53 (11.5)	60 (13.1)
Child health advocacy‡§	104 (14.9)	351 (52.6)	166 (24.9)	150 (22.5)	185 (40.7)	122 (26.8)	148 (32.5)
Tutoring/mentoring individuals	349 (49.9)	438 (64.9)	92 (13.6)	145 (21.5)	390 (85.5)	37 (8.1)	29 (6.4)
Coaching a Sports Team	139 (19.9)	609 (90.6)	24 (3.6)	39 (5.8)	435 (95.8)	11 (2.4)	8 (1.8)
Longitudinal community project	NA	500 (74.7)	56 (8.4)	113 (16.9)	357 (78.8)	43 (9.5)	53 (11.7)

NA indicates not assessed.

*Missing data less than 5%.

†Responses limited to PL2 and PL3 residents.

‡Female greater than male involvement before medical school; *P* < .05.

§Female greater than male involvement during medical school; *P* < .05.

||Male greater than female involvement before medical school; *P* < .01.

¶Male greater than female involvement during medical school; *P* < .001.

community pediatrics. However, compared to men, women placed greater importance on inclusion of 16 of 17 community activities in their training (*P* < .05 for all activities except coaching a sports team) and were more likely to report that training in the community would have “moderate” to “substantial” (vs “limited” to “no”) influence on their future career activities (62.7% vs 49.3%, *P* < .05).

Anticipated Future Involvement in Community Activities

Many residents anticipated moderate or substantial future involvement, 10 years hence, in community health centers (50%) and schools (49%) or serving on a community committee or board (52%) (Table 3). Women expected greater future involvement in day care centers, Head Start programs, shelters, community health centers,

Table 3. Gender and Anticipated Future Involvement in 10 Years*

Activity	Mean Level of Involvement (SD)		
	Total	Female	Male
Setting			
School	2.43 (.83)	2.45 (.85)	2.40 (.78)
Day care center†	1.72 (.74)	1.77 (.75)	1.61 (.69)
Head Start program‡	1.74 (.76)	1.82 (.78)	1.59 (.69)
Juvenile justice program	1.49 (.66)	1.51 (.69)	1.44 (.60)
Shelter§	1.84 (.80)	1.90 (.81)	1.71 (.77)
Community health center‡	2.45 (.96)	2.58 (.97)	2.20 (.91)
Local or state health department†	2.06 (.93)	2.11 (.95)	1.95 (.88)
Camp for children with special needs	2.09 (.91)	2.10 (.94)	2.08 (.83)
Other community involvement			
Serving on community committee/board§	2.51 (.92)	2.59 (.92)	2.39 (.92)
Providing legislative testimony	1.79 (.83)	1.77 (.83)	1.82 (.83)
Lobbying local, state, or federal legislators	1.88 (.87)	1.89 (.87)	1.86 (.85)

*Involvement reported on scale from 1 “not at all” to 4 “substantial.” Missing data less than 4%.

†Female greater than male involvement; *P* < .05.

‡Female greater than male involvement; *P* < .01.

§Female greater than male involvement; *P* < .001.

Table 4. Gender and Anticipated Future Involvement in Selected Community Health Settings¹

Community Health Setting	Gender (Standardized β coefficients, 95% C.I.)
School	0.02 (−0.10, 0.17)
Day care center	0.09 (0.02, 0.25)*
Head Start program	0.14 (0.11, 0.35)**
Juvenile justice program	0.05 (−0.04, 0.17)
Shelter	0.08 (0.01, 0.26)*
Community health center	0.15 (0.16, 0.45)**
Local or state health department	0.09 (0.02, 0.32)*
Camp for children with special needs	−0.001 (−0.14, 0.14)

¹Adjusted for year of training, program size, underrepresented minority status, source of guidance regarding community pediatrics, involvement in specific setting before medical school, involvement in specific setting during medical school, number of benefits associated with involvement in community activities.

* $P < .05$

** $P < .01$

health departments, and community committees/boards. For the 8 settings for which previous as well as expected future involvement were assessed, female gender remained positively associated, in adjusted analyses, with future involvement in 5 settings (Table 4).

Benefits and Constraints to Current Community Involvement

Residents reported the benefits and constraints they currently experience in their community involvement. Personal satisfaction (83%) and the opportunity to gain valuable skills and/or knowledge (73%) were cited most frequently as benefits. Top constraints included logistics/scheduling difficulty (68%) and lost time for pleasure/leisure (56%).

More than twice as many men as women cited no benefits associated with participating in community activities (13% vs 6%; $P = .003$). Women indicated personal satisfaction more than men (85% vs 78%; $P = .023$). Compared to men, more women cited logistic/scheduling difficulty (73% vs 59%; $P < .001$) and concerns for personal safety (11% vs 4%; $P = .004$) as constraints to community involvement. On the other hand, more men identified lost time for research as a constraint (8% vs 4%; $P = .009$). Women and men reported comparable mean numbers of benefits (2.6 vs 2.4; $P = .08$) and constraints (1.8 vs 1.7; $P = .59$).

DISCUSSION

We identify significant associations of gender with past and anticipated future community child health involvement among pediatric residents. Compared to men, women are more involved with community activities prior to medical school. In addition to perceiving greater importance of community training, overall, women anticipate greater community involvement after residency. For several settings, the influence of gender on future involvement persists after controlling for past exposures, personal characteristics, and perceived benefits associated with involvement. Although male and female residents report similar

exposures to community activities and related guidance and comparable mean numbers of benefits and constraints, differences remain in the specific factors they report.

As DeWitt²⁶ describes in applying adult learning theory to community pediatrics curricula, residents need to recognize the importance of community experiences and understand how these experiences can affect their future practice and other professional activities. Moreover, at the program level, our findings highlight the need to consider gender specific benefits and constraints to community involvement because these perspectives likely influence motivations. A flexible community pediatrics curriculum that offers choices after assessing trainees' past experiences, interests, and professional needs may be most effective.

These gender differences should be considered amid changing demographics of the pediatric workforce, with women comprising a growing proportion of trainees and more pediatricians working part-time.⁹ As pediatricians assume new professional and social roles after completing training, it is unclear whether expectations for future involvement will translate into assumption of community roles, regardless of gender. Having children younger than 5 years, for example, has been negatively associated with participation in community health activities.¹² However, part-time employment may provide opportunities to balance obligations to family, community, and self and may optimize opportunities for civic engagement.¹⁰

Several limitations should be noted. First, respondents reported on the intensity but not the quality of their involvement in community activities. We also did not distinguish between required and elective opportunities; our survey of program directors indicates that the voluntary nature of involvement varies by setting.⁵ Second, there are likely other unmeasured factors influencing expectations for community involvement. Third, we focus on involvement in community settings as an important aspect of community pediatrics and do not assess care of individual patients. Third, our response rate, achieved with multiple mailings and a modest incentive, was 43%. Post office difficulties related to anthrax,²⁷ unreliable addresses for some trainees, and busy lives of pediatric residents likely contributed. Recent AAP periodic survey response rates, largely among practicing pediatricians, have been 53% to 55% and are comparable with average physician response rates for large surveys (52%).²⁸ Respondents in our study may respond more favorably than nonrespondents regarding community involvement; however, we found no differences between respondents and nonrespondents with regard to gender, age, and year of training.

The gender differences for future involvement are intriguing and consistent with work outside medicine for which higher levels of civic engagement are found among women.^{10,12} Because we adjusted for known confounders, the observed differences in anticipated future involvement may reflect initial career inclinations and inherent attributes of trainees.^{29,30} New efforts underway in pediatric residency programs that provide longitudinal exposure to community pediatrics may affect decisions regarding community involvement³¹ and may close the anticipated gen-

der gap in actual participation. These efforts resonate with the notion that physicians' involvement in communities is both a professional obligation and civic duty.³² Our findings suggest that programs need to consider the impact of gender and other personal attributes on the training experiences that are offered.

ACKNOWLEDGMENTS

We gratefully acknowledge generous support from the Dyson Foundation. The Dyson Initiative National Evaluation Advisory Committee reviewed survey content and provided critical input regarding preliminary findings. Additional members of the Dyson Initiative National Evaluation team (Holly Grason, MA; Jennifer Mettrick, MHS; and Bernard Guyer, MD, MPH) contributed to survey design and manuscript review.

REFERENCES

- Johnson RL, Charney E, Cheng TL, et al. Final report of the FOPE II Education of the Pediatrician Workgroup. *Pediatrics*. 2000;106:1175–1198.
- Charney E. Pediatric education in community settings: where do we go from here? *Pediatrics*. 1996;98:1293–1295.
- Future of Pediatric Education II: organizing pediatric education to meet the needs of infants, children, adolescents, and young adults in the 21st century. *Pediatrics*. 2000;105:163–212.
- American Academy of Pediatrics, Committee on Community Health Services. The pediatrician's role in community pediatrics. *Pediatrics*. 1999;103:1304–1307.
- Solomon B, Minkovitz CS, Mettrick JE, Carraccio C. Training in community pediatrics: a national survey of program directors. *Ambul Pediatr*. 2004;4:476–481.
- Pan RJ, Cull WL, Brotherton SE. Pediatric residents' career intentions: data from the leading edge of the pediatrician workforce. *Pediatrics*. 2002;109:182–188.
- Brotherton SE. The relationship of indebtedness, race, and gender to the choice of general or subspecialty pediatrics. *Acad Med*. 1995;70:149–151.
- Ellsbury KE, Baldwin L, Johnson KE, et al. Gender-related factors in the recruitment of physicians to the rural Northwest. *J Am Board Fam Pract*. 2002;15:391–400.
- Cull WL, Mulvey HJ, O'Connor KG, et al. Pediatricians working part-time: past, present, and future. *Pediatrics*. 2002;109:1015–1020.
- Putnam RD. *Bowling Alone: The Collapse and Revival of American Community*. New York, NY: Simon & Schuster; 2000.
- Crawford S, Levitt P. Social change and civic engagement. In: Skocpol T, Fiorina MP, eds. *Civic Engagement in American Democracy*. Washington, DC: Brookings Institution Press; 1999. pp 249–296.
- Caiazza A. *Women's Community Involvement: The Effects of Money, Safety, Parenthood, and Friends*. Washington, DC: Institute for Women's Policy Research; 2001.
- Nader PR, Broyles SL, Brennan J, Taras H. Two national surveys on pediatric training and activities in school health: 1991 and 2001. *Pediatrics*. 2003;111:730–734.
- Minkovitz C, Grason H, Aliza B, et al. Evaluation of the Community Access to Child Health program. *Pediatrics*. 1999;103:1384–1393.
- Lovejoy FH Jr, Nathan DG. Careers chosen by graduates of a major pediatrics residency program, 1974–1986. *Acad Med*. 1992;67:272–274.
- Pan RJ, Clark-Chiarelli N, Peters AS, Block SD. Intention to practice primary care by pediatric residents: nature or nurture? *Clin Pediatr (Phila)*. 1999;38:473–479.
- DeWitt DE, Curtis R, Burke W. What influences career choices among graduates of a primary care training program? *J Gen Intern Med*. 1998;13:257–261.
- Chesney RW. The impact of medical school loans and the promise of loan repayment on entry into a pediatric academic career. *Arch Pediatr Adolesc Med*. 2001;155:1296–1297.
- Hardie WD, Jaskiewicz JA. Declining pediatric subspecialty training and rising educational debt. *J Pediatr*. 2001;138:149–151.
- Future of Pediatric Education II Taskforce. The role of pediatric subspecialists. *Pediatrics*. 2000;105:185S–189S.
- Xu, Veloski J, Hojat M, et al. Factors influencing primary care physicians' choice to practice in medically underserved areas. *Acad Med*. 1997;72:S109–S111.
- Pathman DE, Konrad TR, King TS, et al. Medical training debt and service commitments: the rural consequences. *J Rural Health*. 2000;16:264–272.
- American Board of Pediatrics. Workforce data 2005–2006. Available at: <https://www.abp.org/ABPWebSite/stats/wrkfrc/workforce05.pdf>. Accessed September 8, 2006.
- American Medical Association. *Physician Characteristics and Distribution in the US, 2000–2001*. Chicago, Ill: American Medical Association; 2001.
- Fellowship and Residency Electronic Interactive Database (FREIDA)*. Chicago, Ill: American Medical Association; 2004.
- DeWitt T. The application of social and adult learning theory to training in community pediatrics, social justice, and child advocacy. *Pediatrics*. 2003;112:755–757.
- Dewan PK, Fry AM, Laserson K, et al. Inhalational anthrax outbreak among postal workers, Washington, DC, 2001. *Emerg Infect Dis*. 2002;8:1066–1072. Available at: <http://www.cdc.gov/ncidod/EID/vol8no10/02-0330.htm>. Accessed September 8, 2006.
- Cummings SM, Savitz LA, Konrad TR. Reported response rates to mailed physician questionnaires. *Health Serv Res*. 2001;35:1347–1355.
- Pathman DE. Medical education and physicians' career choices: are we taking credit beyond our due? *Acad Med*. 1996;71:963–968.
- Rabinowitz HK, Diamond JJ, Veloski J, Gayle JA. The impact of multiple predictors on generalist physicians' care of underserved populations. *Am J Public Health*. 2000;90:1225–1228.
- Nader PR, Kaczorowski J, Benioff S, et al. Beyond the new morbidity: education for community pediatrics. *Clin Pediatr (Phila)*. 2004;43:6:505–521.
- Gruen RL, Pearson SD, Brennan TA. Physician-citizens—public roles and professional obligations. *JAMA*. 2004;291:94–98.