Current Workforce of General Pediatricians in the United States

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on behalf of the Research Advisory Committee of the American Board of Pediatrics

abstract

BACKGROUND AND OBJECTIVES: A near vacuum exists for credible information regarding specialty-specific demography, including gender, years since training completion, current employer, academic affiliation, and hours worked in specific tasks. Understanding the current status and changes to the medical workforce and its work patterns is essential to assessing whether the supply and distribution meets the needs of patients, institutions, society, and educational programs.

METHODS: A self-administered electronic survey sent to all pediatricians at the time of their enrollment in the Maintenance of Certification program in 2013–2014. The survey focused on exploring trends associated with career choice, career paths, time spent in professional activities, and current practice characteristics. Logistic regression and χ^2 analyses were conducted.

RESULTS: The response rate was 87.2% (N = 15 351). Of those who completed the survey, 9253 (64%) self-identified as general pediatricians. An increased likelihood of working part-time was seen among women (odds ratio [OR]: 12.21), those without an academic appointment (OR: 1.32), and those not working in a private/independent practice (OR: 1.15). Overall, 89% (n = 8214) of respondents stated that their current allocation of professional time was approximately what they wanted. Those more likely to be involved in quality improvement in the past year did not work in independent/private practices (OR: 1.78) and worked full-time (OR: 1.16).

CONCLUSIONS: Understanding the current nature of the pediatric workforce is a first step in providing data to guide future workforce planning and the training experiences required to maintain and shape the workforce to meet the current and future needs of children.

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WHAT'S KNOWN ON THIS SUBJECT: Previous assessments of general pediatricians, including hours worked, employer, quality improvement, and participation have been limited by a combination of low response rates and small numbers of respondents. These factors raise questions regarding the generalizability of those studies.

WHAT THIS STUDY ADDS: This study provides information on the largest sample of practicing general pediatricians to date. The vast majority are working in positions that are approximately what they wanted with regard to professional responsibilities and clinical duties.

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It is difficult to determine the current state of the workforce of a medical specialty. Even reputable national data sources that purport to give accurate counts of a given specialty are often in conflict with each other.[1] Beyond simple numerical counts, even fewer data sources are able to use a sufficiently generalizable sample in a specialty-specific fashion. A near vacuum exists for credible information regarding specialty-specific demography, including such variables as gender, years since the end of training, employer, academic affiliation, and hours worked in specific professional or clinical tasks. Data regarding plans for retirement and satisfaction with current position are also limited.

Previous specialty-specific studies of the medical workforce that have attempted to address these topics have often been limited by a combination of low response rates and/or small numbers of respondents.[2,3] These factors limit generalizability and raise questions regarding how well they represent the true nature of the specialty they are meant to assess.[4–6]

Understanding the status and the changes over time to the medical workforce and its work patterns is essential to efforts assessing whether there are adequate supply and distribution to meet the needs of patients, institutions, society, and educational programs.[7] Furthermore, such data are also necessary to help determine whether training processes and pipelines are meeting the needs of those same groups now, and into the future.

For pediatrics specifically, as the characteristics of those in practice and the health systems in which they work continue to change, understanding the recent and intended future work patterns of different demographic groups of pediatricians is increasingly important.[7,8] Recognizing and tracking gender and generational changes in work patterns and work styles have become essential in identifying trends in the available workforce beyond simple head counts of providers.[7,9–11] Understanding the impact of changes in pediatric health care delivery systems also is critical. For example, a contemporary issue for pediatrics is the emergence of a cadre of pediatricians who provide care primarily in the inpatient setting (ie, hospitalists). In addition, changes to the projected retirement age for a significant proportion of pediatricians due to changes in the economic situation, health care delivery system, and gender balance; the burden of medical documentation; or other factors can greatly affect future workforce projections. Last, practice is continuously affected by system changes in response to federal legislation, health system accreditation requirements, and professional self-regulation through certification. Variation among groups in participation in quality improvement (QI) activities in response to these changes is of significant interest.[12]

The American Board of Pediatrics (ABP) began to collect data from all diplomates at the time of their enrollment in the Maintenance of Certification (MOC) program. These surveys are part of a longitudinal data collection effort that will define and track trends in the pediatric workforce over the coming decades. This report presents data from ~10 000 general pediatricians in practice who enrolled in the MOC program in 2013 and 2014. This sample also provided the opportunity to determine if specific aspects of the professional responsibilities of this group of pediatricians, most notably in QI efforts, differed from those whose responsibilities are primary outpatient.

METHODS

Survey Instrument and Sample

In collaboration with the ABP's Research Advisory Committee, the research team developed a structured questionnaire designed to be completed in ≤10 minutes. The survey focused on exploring trends associated with career choice, career paths, time spent in professional activities, and current practice characteristics of general pediatricians and subspecialists at the time of enrollment for the MOC program.

As of October 2009, the ABP incorporated the survey within its online application process to the MOC program. The survey used branching logic so that different respondents may have completed different numbers of items depending on their responses to specific questions.

Data Analysis

Survey data from those who enrolled in the MOC program in 2013 and 2014 were included in the analyses. Data from the surveys were transmitted from the ABP to the research team at the Child Health Evaluation and Research (CHEAR) Unit in Microsoft Excel format for analysis. The Excel files were reviewed for accuracy in terms of survey branching and imported into the SAS system for statistical analysis (SAS, version 9.4;Research Triangle Park, North Carolina).

Frequency distributions were calculated for all survey items for the group of respondents self-identified as general pediatricians currently in practice. Univariate statistics were calculated for ratio-scale survey items related to time spent in professional activities in general and in clinical activities in particular. Median and mean percentages were also calculated for questions related to time spent in professional and clinical activities. Next, we generated χ^2 statistics on the basis

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of cross-tabulation frequencies to examine the relationship of the survey items to gender (women versus men), site of medical education as designated by American medical graduate (AMG) versus international medical graduate (IMG), part- and full-time work status (self-defined by the respondent), and years since completion of training (<10 vs 10–20 vs >20 years). A *P* value <.05 was considered to be statistically significant.

Five logistic regression models were constructed to examine the independent association of the demographic variables, practice ownership, and academic appointment with the outcome variables of general pediatricians reporting job characteristics with regard to the following: (1) allocation of professional time, (2) specific clinical responsibilities, (3) part-time employment, (4) anticipated retirement age, and (5) participation in QI activities. For the regression equation focused on participation in QI, we also included designation as hospitalist as a predictor variable, defined as >80% of clinical time spent in general inpatient care. This project was approved by the Institutional Review Board for the Protection of Human Subjects at the University of Michigan.

RESULTS

There were 18 824 general pediatricians and subspecialists who registered for MOC in 2013 and 2014. Of these, 1224 used a separate method of registration for MOC that did not include the ability to complete the survey. These 1224 were either permanent certificate holders (n = 1103) or served on committees of the ABP (n = 121). The remaining 17 600 were eligible to complete the survey. The response rate was 87.2% (N = 15 351). Of those who completed the survey, 9253 (64%) self-identified as general pediatricians and are the focus of analyses in this study. The sample comprised 64% women and 80% AMGs. The largest percentage had been in practice ≥10 years but <20 years (47%). Most worked in a general pediatric group (54%). One-fourth (25%) reported currently working part-time (Table 1).

TABLE 1 Demographic Characteristics of the Sample: General Pediatricians Who Enrolled in MOC in 2013–2014

	% (*n*)
Gender	
Female	64 (5910)
Medical education	
AMG	80 (7369)
Years since training	
<10	21 (1926)
≥10 y but <20	47 (4344)
≥20	32 (2934)
Work status	
Part-time	25 (2290)
Practitioner type	
Generalist	92 (8551)
Practice type	
General pediatrics group	54 (4985)
Multispecialty group	26 (2423)
Solo practitioner	11 (995)
Single subspecialty group	2 (163)
Which of the following best describes the ownership of your primary practice?	
Independent practice/private practice	55 (5071)
Community or non–university-affiliated hospital	16 (1464)
University/medical school	11 (973)
Managed-care network	7 (672)
Federal, state, or local government	4 (413)

N = 9253.

Respondents reported that that they spent a mean of 85% of their professional time in direct and/or consultative inpatient and outpatient care (including patient billing and charting), 8% in administration, 5% in medical education, and 2% in research. These same general pediatricians also reported that they spent a mean of 80% of their clinical time in general outpatient care and 13% in general inpatient care of patients <21 years of age. The remainder was spent in the care of patients ≥21 years of age. Of the total, 702 (7.6%) spent ≥80% of their clinical time in general inpatient care. This group was designated as hospitalists in other analyses.

Table 2 shows the characteristics of the professional current position for subjects, stratified by gender, medical school (AMG versus IMG), work status (full-time or part-time), and years since training was completed. Overall, 89% (n = 8214) stated that the allocation of professional time was approximately what they wanted in their current position. An even higher proportion (94%; n = 8730) reported their allocation of clinical time was approximately what they wanted in their current position. With regard to participation in QI over the past year, differences were seen across several groups, with the largest seen between AMGs and IMGs (84% vs 78%; P < .05). Large differences were also seen between groups with regard to whether they had an academic appointment and in their role in practice ownership.

Table 3 shows the responses to questions regarding work hours,

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TABLE 2 Characteristics of Current Position

		Gender		Medical School		Work Status		Years Since Training			Practitioner Type	
	Total (*N* = 9253)	Men	Women	AMG	IMG	Full-time	Part-time	>10 y	≥10 y but <20 y	≥20 y	Generalist	Hospitalist
% (*n*)		36 (3343)	64 (5910)	80 (7369)	20 (1884)	75 (6963)	25 (2290)	21 (1926)	47 (4344)	32 (2934)	92 (8551)	8 (702)
Is this allocation of professional time approximately what you wanted in your current position?												
Yes	89 (8214)	90 (3025)	88 (5189)	89 (6564)	88 (1650)	88 (6134)	91 (2080)	87 (1668)	89 (3848)	90 (2653)	89 (7575)	91 (639)
P		<.0001		.07		.0003			.0002		.05	
Is this allocation of clinical time approximately what you wanted in your current position?												
Yes	94 (8730)	94 (3144)	95 (5586)	94 (6934)	95 (1796)	94 (6548)	95 (2182)	94 (1805)	94 (4084)	95 (2794)	94 (8049)	97 (681)
P		.35		.04		.03			.04		.002	
Over the past year, have you or your practice been involved in an ongoing QI activity that involves your daily work?												
Yes	82 (7631)	84 (2824)	81 (4807)	84 (6154)	78 (1477)	83 (5794)	80 (1837)	82 (1581)	82 (3567)	83 (2439)	82 (7046)	83 (585)
P		.0001		<.0001		.001			.49		.53	
Do you currently hold an academic appointment?												
No	57 (5368)	54 (1796)	60 (3572)	55 (4042)	70 (1326)	56 (3935)	63 (1433)	56 (1084)	61 (2662)	54 (1598)	59 (5040)	47 (328)
Yes, full-time academic faculty	9 (802)	9 (308)	8 (494)	9 (699)	5 (103)	11 (749)	2 (53)	13 (253)	7 (316)	8 (231)	7 (640)	23 (162)
Yes, part-time academic faculty	6 (523)	5 (177)	6 (346)	6 (435)	5 (88)	4 (289)	10 (234)	6 (117)	5 (222)	6 (177)	6 (473)	7 (50)
Yes, adjunct, volunteer, or courtesy faculty	28 (2560)	32 (1062)	25 (1498)	30 (2193)	19 (367)	29 (1990)	25 (570)	25 (472)	26 (1144)	32 (928)	28 (2398)	23 (162)
P		<.0001		<.0001		<.0001			<.0001		<.0001	

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TABLE 2 Continued

	Total (N = 9253)	Gender		Medical School			Work Status			Years Since Training			Practitioner Type	
		Men	Women	AMG	IMG		Full-time	Part-time	>10 y	≥10 y but <20 y	≥20 y		Generalist	Hospitalist
Practice ownership														
Full owner	33 (1669)	40 (796)	28 (873)	26 (1023)	54 (646)		39 (1534)	12 (135)	17 (147)	33 (804)	41 (709)		33 (1599)	35 (70)
Part owner	38 (1910)	43 (847)	34 (1063)	43 (1658)	21 (252)		40 (1570)	30 (340)	31 (270)	39 (957)	39 (666)		38 (1851)	30 (59)
Not an owner	29 (1492)	17 (330)	38 (1162)	31 (1189)	25 (303)		21 (819)	58 (673)	52 (460)	28 (695)	20 (336)		29 (1422)	35 (70)
P		<.0001		<.0001			<.0001			<.0001				.05

Data are presented as % (n).

expected duration of employment in their current position, periods of clinical inactivity, and expected retirement plans. The highest proportions of those expecting to work part-time in the next 5 years were found among women (13%) and those whose training was completed ≥20 years ago (15%). Most (76%) expected to remain in their current position for at least the next 5 years, with the largest variation seen among those who worked full-time compared with those who worked part-time (79% vs 69%; $P < .0001$) and those who differed in the amount time that had passed since the completion of training. Only 8% reported that they had a period of clinical activity of ≥12 months.

Regression Analysis

Results of the 5 regression analyses with the outcome variables of (1) working part-time, (2) having desired professional duties, (3) having desired clinical duties, (4) participation in QI activities, and (5) plans to retire before age 65 years are presented in Table 4.

Working Part-time

The first regression equation shows that women have a greater likelihood of working part-time (odds ratio [OR]: 12.21) as do those who expect to be in their current jobs for <5 years (OR: 1.58), those without an academic appointment (OR: 1.32), and those not working in a private/independent practice (OR: 1.15). Those less likely to work part-time include IMGs (OR: 0.47) and those who plan to retire after age 65 years (OR: 0.61).

Match of Desired With Actual Professional and Clinical Duties

The second regression equation shows that those who are more likely to agree that their allocation of professional time in their current job is what they wanted are those who have been out of training for ≥20 years (OR: 1.45). Those less likely to agree with the statement were those whose planned duration of employment in their current job is <5 years (OR: 0.46), those who work full-time (OR: 0.60), and women (OR: 0.72).

The third regression equation examines the odds of subjects who agree that their allocation of clinical responsibilities in their current job is what they wanted. Those more likely to agree had worked ≥20 years since the end of training (OR: 1.32) or were IMGs (1.34). Those less likely to agree with the statement were those who intended to work in their current position for <5 years (OR: 0.45), those who did not work in independent/private practices (OR: 0.70), and those who worked full-time (OR: 0.70).

Participation in QI Activities

The fourth regression equation focuses on the odds of involvement with QI activities. Those more likely to be involved with QI were those who did not work in independent/private practices (OR: 1.78) and those who worked full-time (OR: 1.16). Those less likely to be involved with QI were those without an academic appointment (OR: 0.52), IMGs (OR: 0.76), and women (OR: 0.83).

Retirement Plans

The final regression equation explores the odds of different groups of subjects planning to retire before age 65 years. Those who were more likely to intend to do so were women (OR: 1.55) and those without an academic appointment (OR: 1.37). Those who were less likely to intend to retire before age 65 years had been out of training for ≥20 years (OR: 0.37) or from 10 to 20 years (OR: 0.76) or were those who work full-time (OR: 0.59) or were IMGs (OR: 0.70).

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TABLE 3 Work Hours and Duration

		Gender		Medical School		Work Status		Years Since Training			Practitioner Type	
	Total (*N* = 9253)	Men	Women	AMG	IMG	Full-time	Part-time	>10 y	≥10 y but <20 y	≥20 y	Generalist	Hospitalist
% (*n*)		36 (3343)	64 (5910)	80 (7369)	20 (1884)	75 (6963)	25 (2290)	21 (1926)	47 (4344)	32 (2934)	92 (8551)	8 (702)
Do you intend to work part-time at some point during the next 5 years?												
Yes, I plan to work exclusively part-time during the next 5 years	2 (134)	2 (53)	2 (81)	(2 (95)	2 (39)	2 (134)	—	2 (24)	2 (61)	2 (48)	2 (119)	3 (15)
Yes, I plan to work part-time at some point during the next 5 years	9 (600)	6 (202)	11 (398)	8 (442)	10 (158)	9 (600)	—	8 (110)	5 (178)	13 (302)	9 (555)	8 (45)
No	75 (5248)	83 (2655)	69 (2593)	76 (4096)	72 (1152)	75 (5248)	—	74 (1013)	81 (2608)	69 (1611)	75 (4820)	76 (428)
Unsure	14 (981)	9 (286)	18 (695)	14 (729)	16 (252)	14 (981)	—	16 (217)	12 (391)	16 (364)	14 (906)	13 (75)
P		<.0001		.003		—			<.0001		.51	
What is your planned duration of employment in your current position?												
<1 year	2 (156)	1 (48)	2 (108)	2 (129)	1 (27)	2 (106)	2 (50)	3 (51)	1 (60)	1 (42)	2 (142)	2 (14)
1 to <5 years	10 (913)	9 (304)	10 (609)	10 (708)	11 (205)	9 (640)	12 (273)	11 (203)	7 (292)	14 (401)	10 (836)	11 (77)
≥5 years	76 (7083)	80 (2663)	75 (4420)	77 (5727)	72 (1356)	79 (5494)	69 (1589)	72 (1397)	82 (3557)	72 (2110)	76 (6564)	74 (519)
Unsure	12 (1100)	10 (327)	13 (773)	11 (804)	16 (296)	10 (722)	17 (378)	14 (275)	10 (434)	13 (381)	12 (1008)	13 (92)
P		<.0001		<.0001		<.0001			<.0001		.39	
At what age do you expect to retire?												
<60 years	12 (1099)	8 (264)	14 (835)	13 (956)	8 (143)	10 (665)	19 (434)	17 (325)	14 (622)	5 (152)	12 (1000)	14 (99)
60–64 years	32 (2922)	25 (823)	35 (2099)	33 (2406)	27 (516)	29 (2038)	39 (884)	38 (746)	34 (1462)	24 (714)	32 (2709)	30 (213)
65–69 years	37 (3466)	40 (1351)	36 (2115)	37 (2756)	38 (710)	39 (2742)	32 (724)	32 (611)	36 (1571)	44 (1279)	37 (3219)	35 (247)
≥70 years	19 (1766)	27 (905)	15 (861)	17 (1251)	27 (515)	22 (1518)	11 (248)	13 (244)	16 (689)	27 (789)	19 (1623)	20 (143)
P		<.0001		<.0001		<.0001			<.0001		.16	
Over the course of your career, have you experienced any periods of clinical inactivity of ≥12 consecutive months?												
Yes	8 (717)	3 (105)	10 (612)	7 (535)	9 (182)	5 (347)	15 (370)	5 (118)	9 (365)	8 (233)	8 (665)	8 (52)
P		<.0001		.006		<.0001			.01		.99	

Data are presented as % (*n*).

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TABLE 4 Results of Regression Analyses

Variable	Effect	Point Estimate	95% Confidence Limits Lower	Upper
Working part-time				
Medical education	IMG versus AMG	0.472	0.408	0.547[a]
Retirement age	≥65 vs <65 years	0.606	0.545	0.673[a]
Years since training	10–20 vs <10 years	1.051	0.922	1.197
	≥20 vs < 10 years	1.005	0.867	1.164
Practice ownership	All other types versus Independent/private	1.148	1.029	1.281[a]
Academic appointment	No appointment versus has appointment	1.327	1.131	1.556[a]
Planned duration in job	<5 years/unsure versus ≥5 years	1.583	1.405	1.784[a]
Gender	Female versus male	12.21	10.183	14.639[a]
Match of desired with actual professional duties				
Planned duration in job	<5 years/unsure versus ≥5 years	0.462	0.401	0.532[a]
Work status	Full-time versus part-time	0.6	0.506	0.711[a]
Gender	Female versus male	0.717	0.618	0.831[a]
Medical education	IMG versus AMG	0.927	0.791	1.088
Practice ownership	All other types versus independent/private	1.009	0.877	1.16
Academic appointment	No appointment versus has appointment	1.059	0.874	1.283
Years since training	10–20 vs <10 years	1.092	0.926	1.287
	≥20 vs <10 years	1.448	1.204	1.741[a]
Match of desired with actual clinical duties				
Planned duration in job	<5 years/unsure versus ≥5 years	0.454	0.375	0.549[a]
Practice ownership	All other types versus independent/private	0.696	0.575	0.842[a]
Work status	Full-time versus part-time	0.701	0.555	0.886[a]
Years since training	10–20 vs <10 years	0.936	0.746	1.175
Academic appointment	No appointment versus has appointment	1.043	0.813	1.336
Gender	Female versus male	1.102	0.905	1.341
Years since training	≥20 vs <10 years	1.319	1.021	1.704[a]
Medical education	IMG versus AMG	1.341	1.054	1.705[a]
Participation in QI activities				
Academic appointment	No appointment versus has appointment	0.512	0.416	0.631[a]
Planned duration in job	<5 years/unsure versus ≥5 years	0.758	0.667	0.861[a]
Medical education	IMG versus AMG	0.764	0.671	0.87[a]
Gender	Female versus male	0.826	0.729	0.936[a]
Practitioner type	Hospitalist versus generalist	0.841	0.68	1.041
Years since training	10–20 vs <10 years	1.049	0.909	1.211
	≥20 vs <10 years	1.143	0.977	1.336
Work Status	Full-time versus part-time	1.164	1.019	1.329[a]
Practice ownership	All other types versus independent/private	1.783	1.581	2.012[a]
Retirement plans				
Years since training	≥20 vs <10 years	0.367	0.324	0.415[a]
Work status	Full-time versus part-time	0.592	0.533	0.658[a]
Medical education	IMG versus AMG	0.703	0.63	0.785[a]
Years since training	10–20 vs <10 years	0.763	0.683	0.853[a]
Practice ownership	All other types versus independent/private	0.993	0.907	1.087
Academic appointment	No appointment versus has appointment	1.373	1.205	1.565[a]
Gender	Female versus male	1.547	1.404	1.705[a]

[a] Values are statistically significant.

DISCUSSION

Current Positions Versus Desired Professional and Clinical Responsibilities

Among the most important findings from this research is that the vast majority of general pediatricians are working in positions that are approximately what they wanted with regard to both their professional responsibilities and clinical duties. However, some subgroups were less likely than others to be in such positions.

Of particular interest, however, is that those who work full-time were less likely than their part-time counterparts to be in positions that matched either of or both their desired professional and clinical duties. Previous studies have been conflicting with regard to part-time physicians' need to make compromises with regard to their duties compared with those who work full-time.[13–15] Our data indicate that the opposite is more likely to be true, at least for general

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pediatricians. It is possible that the relatively high percentage of part-time pediatricians has created more power in the marketplace or that those who work part-time have fewer demands regarding their professional and clinical duties as long as they are able to work part-time. It is also important to note that women were less likely to be in positions that matched their desired allocation of professional duties. Because the majority of pediatricians are women, such findings continue to raise concern regarding the issues of gender equity within the profession.[7,8,10,16–18]

Those pediatricians for whom at least 20 years had elapsed since they completed training were more likely to report that they were in positions that approximated both their desired professional and clinical responsibilities. It appears that seniority may play a role in greater control of time allocation. In addition, there may be a generational effect in satisfaction with allocation of professional time.

Part-time Pediatricians

The finding that 25% of our sample of general pediatricians work part-time is consistent with previous studies.[14,15,19] The nature of part-time practice and its growth within the field of pediatrics has implications both for patient care and for the available clinical workforce.[7] For example, although our data indicate that the vast majority of all pediatricians participate in QI activities, our results also show that full-time pediatricians are more likely to participate than those working part-time. It is unknown if part-time pediatricians have the same opportunity to participate in QI activities in their practices or if other factors have influenced this finding. This deserves further study. In addition, because the trend toward part-time practice is likely to grow (based on other findings in this report), studies assessing any potential differences in quality of care or continuity of care provided by part-time pediatricians should be considered.

Some factors found to be independently associated with part-time practice are consistent with previous studies. For example, by far the highest OR for working part-time was female gender.[14] However, other findings have not been reported previously. Those without academic appointments were more likely to work part-time, suggesting that more flexible working arrangements are found in nonacademic settings. This finding may have implications for future recruitment efforts.

Among those less likely to work part-time include those planning to retire after 65 years of age. This finding may be the result of specific financial issues for such individuals or simply that a subset of those who work full-time enjoy their work so much that they want to continue working in their later years. Others may prefer part-time work as a transition into retirement.

Involvement in QI Activities

Although the majority of participants in our study reported that they have been involved with QI activities over the past 12 months, some groups of general pediatricians were more or less likely to have done so. Among those who were more likely to participate in QI were general pediatricians not working in independent or private practices and those who have an academic appointment. This finding may reflect an increased opportunity for QI in academic settings and also highlight the potential difficulties among private practices to both develop and engage in QI activities. Studies have shown that few in private practice have been trained in QI methods or in how to implement QI programs in their practices.[20] In contrast to many subspecialty QI efforts that focus on a group of patients with a specific condition or diagnosis (eg, cystic fibrosis, inflammatory bowel disease), general pediatricians have no similar opportunities.[21,22] Efforts by the American Academy of Pediatrics to develop learning modules that incorporate QI methods and projects sponsored by American Academy of Pediatrics' chapters throughout the country have likely resulted in the rates of participation being as high as we found.[23] The same may be true of the ABP MOC requirements for participation in QI activities. Nevertheless, awareness of the need to maintain and further expand such efforts is important. Furthermore, those in private independent practice may also have financial pressures that may limit their perceived ability to participate in such efforts relative to other groups of providers.

Others more likely to participate in QI were those who work full-time instead of part-time. It is possible that those who work full-time have more opportunities available for participation or potentially have a greater focus on the overall working of a practice. This difference should not be viewed as an indictment of part-time status but rather calls attention to the need to offer opportunities to engage part-time general pediatricians in QI to the same degree.

Groups less likely to participate in QI included both women and IMGs. Although the majority of both groups do participate in QI activities, it is important for future efforts to increase participation further. Likely, recent improvements in the part 4 requirements of the MOC program will help to increase participation.

One final group was included in the regression analysis of QI participation. One of the frequently mentioned attributes expressed with regard to hospitalists is their increased knowledge and

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participation in QI efforts relative to other general pediatricians.[24] In our sample, we did not find hospitalists to be any more or less likely than others to participate in QI. This finding may be a result of the heterogeneous nature of those primarily providing general inpatient care or the continuing evolution of paradigms for training being developed in new hospitalist fellowship programs.[25] Regardless, future efforts should continue to assess any differences between this group and others regarding components of QI expertise and participation if QI is to be a major component of differentiation for this group of pediatricians.

Plans for Retirement

There has been recent concern expressed regarding volatility in the retirement plans of physicians.[26] Retirement can have significant implications for the available medical workforce, including pediatricians. Contemporary issues postulated to currently affect the age of retirement have included volatility in retirement savings secondary to stock market changes as well as frustration with increasing government regulation of medicine and increased requirements to maintain specialty board certification.[27,28] Of the close to 10 000 general pediatricians in our sample, we found that only 12% plan to retire before the age of 60 and slightly more than half (56%) plan to retire at age 65 years or older. Although our data suggest that there will not be a large number of "early retirees" among general pediatricians, some groups were found to be more likely to retire before the age of 65 than others. Both women and those without academic appointments were independently found to be more likely to retire before age 65 years.

In contrast, other groups were less likely to intend to retire before age 65. The group least likely were those pediatricians who had completed training >20 years ago. This finding suggests a generational difference regarding retirement plans that may have future workforce implications. Full-time pediatricians were also less likely than their part-time counterparts to plan for retirement before age 65. This finding suggests that lifestyle considerations that prompted part-time work may also play a role in plans for duration of employment.

Limitations

Although this is a study in a large sample of general pediatricians and benefitted from a >87% response rate, there are some limitations regarding its generalizability. First, the sample comprised only general pediatricians who registered for the ABP MOC program. As such, our results may not be reflective of those who choose not to maintain certification. Second, for purposes of our analyses, we defined a hospitalist as a pediatrician who provides >80% of his/her clinical care to inpatients. Because there is no current universally accepted definition, this may include or exclude some who consider themselves to be hospitalists.[25,29] Last, our data are from a survey completed by our respondents. Their responses were not independently verified.

Conclusions

This study provides information on the largest sample of practicing pediatricians to date. Understanding the recent nature of the pediatric workforce is only the first step in providing data to help guide future workforce planning and the training experiences required to maintain and shape the workforce to meet the current and future needs of children. The longitudinal nature of this and other studies, as part of the longitudinal workforce project of the ABP, will provide unique information regarding trends and changes in the nature and scope of practice as well as the roles and careers of pediatricians themselves.

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ABBREVIATIONS

ABP: American Board of Pediatrics
AMG: American medical graduate
IMG: international medical graduate
MOC: Maintenance of Certification
QI: quality improvement
OR: odds ratio

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