

Changing Practice Patterns of Family Medicine Graduates: A Comparison of Alumni Surveys from 1998 to 2004

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Background and Objective: The University of Missouri family medicine residency has 297 family physician graduates. We suspected that the practice patterns of graduates were changing.

Methods: All graduates of the residency were surveyed in 1998, 2001, and 2004, asking about practice patterns. To characterize current practice characteristics and scope, we used the latest survey returned by each respondent. We analyzed data for persons who returned all 3 surveys to examine trends across surveys.

Results: Annual response rates ranged from 58% to 78%. Of graduates who responded to all 3 surveys, fewer graduates care for patients in the hospital (71.3%, 1998; 56.5%, 2004), practice obstetrics (40.7%, 1998; 23.2%, 2004), or provide primary care for their patients in the emergency department (25.9%, 1998; 13.0%, 2004). Fewer recent graduates perform flexible sigmoidoscopy or exercise electrocardiograms. Graduates who are practicing obstetrics are more likely to be rural or to have graduated since 1994. Those performing flexible sigmoidoscopy are more likely to be male or to have graduated before 1994. The perceived need for more training in practice management is higher for more recent graduates (14.9% for 1975 to 1983 graduates; 31.9% for 1994 to 2003 graduates).

Conclusions: Across the 3 surveys, there was a decline in the proportion of graduates of this family medicine residency program performing procedures, obstetrics, intensive care unit care, or hospital medicine. This study highlights how the practices of family medicine residency graduates may change over time. Data regarding residency graduate practice profiles may help predict the knowledge and skills residency graduates will need in their future practices and evaluate the impact of the Future of Family Medicine recommendations. (J Am Board Fam Med 2006;19:404–12.)

Family Medicine residency curricula evolve to reflect current Residency Review Committee (RRC) requirements as well as attempt to predict the needs of residency graduates in an ever-changing practice environment. An awareness of changes in practice patterns of graduates may help program directors identify necessary modifications for their residency curricula.

There have been studies in other specialties that have addressed residency graduates' perception of the adequacy of their training. Blumenthal et al¹

surveyed residents from 8 specialties (including family practice) in their last year of training and asked about clinical and nonclinical preparedness. Residents overall rated their clinical preparedness as high, but approximately 10% felt uncomfortable with at least one part of practice. Dailey and colleagues² surveyed 698 graduating orthopedic residents and found that they rated their general training as above average. Miller and colleagues³ surveyed over 25,000 residents graduating from ACGME accredited residency programs in 1996 regarding the degree of difficulty that they experienced in obtaining a practice position. Residents' perception of the difficulty in obtaining a practice position was different from that of the program directors. Salerno et al⁴ surveyed current and recent military Internal Medicine residents about their residency training. They found that most graduates were satisfied with their training. These surveys looked primarily at perception of adequacy in residency training. Practice patterns of graduates from 2 community-based Internal Medicine resi-

Submitted 19 July 2005; revised 20 January 2006; accepted 24 January 2006.

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This research was presented at the 2005 Society of Teachers of Family Medicine (STFM) annual meeting in New Orleans, LA.

Conflict of interest: none declared.

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Table 1. Total Survey Response by Year of Residency Graduation

Characteristic	Year of Survey					
	1998		2001		2004	
Number of surveys returned/number sent out (%)	177/225	(78)	199/261	(76)	172/297	(58)
Year of residency graduation [N (%)]						
1975 to 1983	54	(30.5)	59	(29.6)	46	(26.7)
1984 to 1993	80	(45.2)	80	(40.2)	55	(32.0)
1994 to 2003	43	(24.3)	60	(30.2)	71	(41.3)

idency programs were compared in an article by Beasley et al.⁵ This study noted differences in type of practice and scope of practice between graduates of the 2 residencies, but only at one point in time rather than noting changes in graduates' practices over time.

To our knowledge, no studies have compared trends in both practice demographics and scope of practice of family medicine residency program graduates over time. Such a comparison would help to address whether current residency curricula meets the needs of residency graduates. The University of Missouri family medicine residency program has had 297 graduates over the past 32 years. We survey our graduates every 3 years regarding their practice demographics, scope of practice, and perceptions of the adequacy of their residency training. This article describes the differences in graduates' responses to the 1998, 2001, and 2004 surveys.

Methods

The University of Missouri-Columbia family medicine Residency is a medical school-based program with 12 residents in each of the 3 years. Lists of all graduates' names and addresses are kept in a departmental database, and all graduates are surveyed every 3 years. The survey included items regarding demographics, additional certification, practice characteristics, scope of practice, and adequacy of residency training. Respondents were asked to list topics for which they believe more training would have been helpful. In January of 1998, 2001, and 2004, surveys were mailed to all physicians who had graduated from the residency program since its first graduating class of 1975. Two waves of surveys were mailed to nonresponders after the initial mailing to improve the response rate. Respondents were asked to identify themselves, which allowed us to track multiple surveys by persons over time.

Data from all 3 surveys were entered into a Microsoft Access database. We used SAS for Windows release 8.02 (SAS Institute Inc., Cary, NC) for all statistical analyses. We calculated simple frequencies for all categorical variables and univariate statistics (mean, median, standard deviation) for all continuous variables. We used the latest survey returned by each respondent to characterize current practice characteristics and scope. To examine trends over time, we analyzed data for persons who returned all 3 surveys. We used the Mantel-Haenszel χ^2 to test for trends in practice characteristics. To test whether practice characteristics changed over time differently by respondent's gender, year of graduation (1975 to 1983, 1984 to 1993, 1994 to 2003), and rural/urban practice location, we conducted a stratified analysis using Cochran-Mantel-Haenszel (CMH) statistic of general association.⁶ We defined rural practices as those in communities with populations less than 25,000. Statistical significance was defined as $P < .05$. The Institutional Review Board of the University of Missouri-Columbia School of Medicine approved this project.

Results

Of our 297 graduates, one or more surveys were returned by 259 graduates (87.2%) for a total of 548 surveys. Annual survey response rates (Table 1) varied from 78% (1998) to 58% (2004). All 3 surveys were returned by 108 graduates. Characteristics of residency graduates and their current practices are shown in Table 2. The vast majority of respondents reported board certification. Having a certificate of added qualification (CAQ) declined from 23.9% of 1975 to 1983 graduates to 7.4% of those who graduated between 1994 and 2003 ($P = .004$). The proportion of graduates with a CAQ in sports medicine was similar across graduation cohorts ($P = .99$), but having a CAQ in geriatrics was

Table 2. Characteristics of Residency Graduates and Their Current Practices (%)*

Characteristic (N missing)	Year of Residency Graduation (N)			P Value†
	1975 to 1983 (67)	1984 to 1993 (98)	1994 to 2003 (94)	
Personal information				
Board certification	91.0	91.8	97.9	.06
CAQ	23.9	17.4	7.4	.004
CAQ in geriatrics	17.9	8.2	2.1	<.001
CAQ in sports medicine	4.5	3.1	4.3	.99
Practice information				
Size of community <25,000 (18)	21.9	33.0	44.9	.003
More than 30 miles to a metro area (16)	23.8	17.6	36.0	.05
Number of outpatients per week (14)‡				
Less than 50	33.7	28.4	14.3	.01
50 to 99	25.0	20.4	31.8	
100 or more	38.3	51.1	54.0	
Current practice type§				
Solo	0.0	7.1	6.4	.10
Partnership	17.9	12.2	19.2	.70
FM Group	35.8	21.4	22.3	.08
Multispecialty group	22.4	25.5	22.3	.93
Salaried	29.8	20.4	30.8	.70
Full-time ER	10.4	7.1	7.4	.53
Urgent Care	0.0	4.1	10.6	.003
Student Health	6.0	2.0	3.2	.42
Academic	32.8	15.3	14.9	.009
Academic fellow	1.5	0.0	4.3	.14
Administrative medicine	7.5	4.1	0.0	.01
Rural health clinics	4.5	3.1	9.6	.12
National Health Service Corps site	0.0	2.0	6.4	.02
Health Profession Shortage Area (HPSA)	4.5	2.0	6.4	.44

* For respondents who returned more than 1 survey, the latest survey was used.

† The P value for the Mantel-Haenszel χ^2 test for trend.

‡ Question not asked in 2004 survey. The latest survey as of 2001 (N = 225) was used.

§ Respondents could choose as many practice types as applied. The total therefore exceeds 100%.

less common among recent graduates ($P < .001$). Approximately one-third of our graduates practiced in communities with populations under 25,000; this proportion was greatest for the most recent graduates ($P = .003$). Approximately one-third of graduates who returned all 3 surveys reported practicing in rural communities in each survey ($P = .099$). Residents who graduated from 1975 to 1983 were the most likely to see less than 50 outpatients per week, whereas those who graduated from 1994 to 2003 were the most likely to see 100 or more ($P < .001$). A majority were in group practice (family medicine group, multispecialty group, or academics) at the time of their most recent response. The proportion of graduates in academic settings or administrative medicine was highest among 1975 to

1983 graduates and declined across graduation cohorts ($P = .009$ and $.01$, respectively). Compared with earlier graduates, more recent graduates were the most likely to report working in urgent care settings or National Health Service Corps sites ($P = .003$ and $.02$, respectively).

Hospital Practice

Survey items relating to the scope of practice are shown in Table 3. The proportion of graduates that cared for patients in the hospital was similar across cohorts. Over time, however, graduates who responded to all 3 surveys reported a decrease in providing care for inpatients (71.3% in 1998, 63.0% in 2001, 56.5% in 2004; $P = .02$). This trend was noticeable across all subgroups (CMH

Table 3. Scope of Current Practice for Residency Graduates Surveyed from 1998 to 2004*

Characteristic (N missing)	Year of Residency Graduation (N)			P Value†
	1975 to 1983 (67)	1984 to 1993 (98)	1994 to 2003 (94)	
Hospital privileges				
Care for hospital inpatients	52.2	55.1	60.6	.28
Obstetrical privileges				
Any obstetrics since residency	76.1	51.0	40.4	<.001
Currently practice obstetrics	16.4	24.5	27.7	.11
Currently provide C-sections	1.5	3.1	4.3	.32
ICU privileges				
Have ICU privileges	35.8	49.0	42.6	.52
Emergency medicine				
Provide primary care for patients in ER	16.4	23.5	7.4	.06
Full-time ER doc providing coverage	80.6	79.6	84.0	.53
Office procedures				
Flexible sigmoidoscopy	23.9	23.5	10.6	.02
Colposcopy	14.9	19.4	19.2	.53
Obstetrical ultrasound	7.5	4.1	6.4	.87
Vasectomy	7.5	12.2	7.4	.86
Exercise EKG	14.9	9.2	5.3	.04
Upper GI endoscopy	1.5	1.0	0.0	.27
Laryngoscopy	7.5	10.2	2.1	.11
Geriatrics				
Regularly see nursing home patients	47.8	41.8	43.6	.66
Nursing home medical director	7.7	5.3	3.0	.24
Work schedule‡				
Hours per week worked (12)				
35 or less	7.8	20.2	10.0	.26
36 to 45	21.9	33.7	43.3	
More than 45	70.3	46.1	46.7	
Days on call per month (17)				
None	29.5	26.1	13.6	.03
1 to 4	31.2	27.3	28.8	
More than 4	39.3	46.6	57.6	
Practice management				
Assume risk	31.3	27.6	38.3	.27
Have an office manager	79.1	69.4	75.5	.75
Negotiate own MC contracts	17.9	23.5	13.8	.39
Other				
Teaching medical students	62.7	53.1	60.6	.94
Teaching residents	44.8	35.7	30.8	.08

* For respondents who returned more than one survey, the latest survey was used.

† The P value for the Mantel-Haenszel χ^2 test for trend.

‡ Question not asked in 2004 survey. The latest survey as of 2001 (N = 225) was used.

$P = .011$; Table 4). Graduates in rural practices were consistently more likely to provide inpatient care over time (CMH $P < .001$; Table 4). Male graduates from earlier classes were more likely to provide inpatient care than female graduates; the gap narrowed considerably in the 1994 to 2003 group (CMH $P = .002$; Table 4).

Obstetrics

Although over half of residency graduates have practiced obstetrics at some time since graduation, this proportion has declined for recent graduates (Table 3; $P < .001$). However, recent graduates had the highest proportion of current obstetrical practice (27.7%), although the trend was not significant

Table 4. Selected Practice Characteristics by Graduate's Gender, Year of Graduation, and Rural/Urban Practice Location

Characteristic*	Year of Residency Graduation			P Value†
	1975 to 1983	1984 to 1993	1994 to 2003	
Care for hospital inpatients				
Female	30.8	34.5	55.0	.002
Male	57.4	63.8	64.8	
Rural	78.6	75.9	80.0	<.001
Urban	48.0	54.2	51.0	
1998 survey	70.4	66.2	69.8	.011
2001 survey	57.6	55.0	76.7	
2004 survey	54.4	49.1	59.2	
Currently practice obstetrics				
Rural	35.7	41.4	35.0	.005
Urban	12.0	20.3	24.5	
1998 survey	33.3	35.0	48.8	.002
2001 survey	22.0	30.0	40.0	
2004 survey	15.2	21.8	26.8	
Currently have ICU privileges				
Male	30.8	27.6	32.5	.003
Female	37.0	58.0	50.0	
Rural	64.3	58.6	57.5	.006
Urban	30.0	52.5	34.7	
1998 survey	50.0	57.5	53.5	.02
2001 survey	39.0	46.2	56.7	
2004 survey	32.6	45.4	37.4	
Provide care for patients in the ER				
Rural	28.6	37.9	10.0	.026
Urban	14.0	20.3	6.1	
1998 survey	33.3	30.0	20.9	<.001
2001 survey	20.3	26.2	8.3	
2004 survey	10.9	14.6	5.6	
Perform flexible sigmoidoscopy				
Female	0.0	3.4	2.5	<.001
Male	29.6	31.9	16.7	
1998 survey	37.0	30.0	23.3	.002
2001 survey	33.9	28.8	20.0	
2004 survey	23.9	18.2	4.2	
Perform colposcopy				
Rural	28.6	27.6	27.5	.026
Urban	12.0	18.6	14.3	
Assume risk				
Rural	42.9	37.9	52.5	.013
Urban	28.0	27.1	30.6	
1998 survey	53.7	42.5	41.9	<.001
2001 survey	30.5	27.5	23.3	
2004 survey	30.4	25.4	39.4	

* For analysis by year of survey, all surveys were used (N = 548). For analysis by rural location or gender, the latest response for each graduate was used (N = 259).

† Cochran-Mantel-Haenszel test for general association.

($P = .11$). Graduates who responded to all 3 surveys reported a reduction in obstetrical practice (40.7% in 1998, 33.3% in 2001, 23.2% in 2004; $P = .006$). The percentage currently practicing obstetrics has declined across surveys for all 3 groups of graduates; the most recent graduates reported the highest proportion of obstetrical practice at all 3 surveys (CMH $P = .002$; Table 4). There was no difference in the pattern of obstetrical practice of male and female graduates (CMH $P = .059$); however, among recent graduates, women were more than twice as likely to practice obstetrics as men (40.0% vs. 18.5%, respectively). More graduates in rural locations reported practicing obstetrics than graduates in urban locations in all 3 cohorts, with recent graduates showing the least difference (CMH $P = .005$; Table 4).

Intensive Care and Emergency Room Practice

The percentage of graduates with intensive care unit (ICU) privileges has remained stable both across cohorts ($P = .52$, Table 3) and across time for graduates who responded to all 3 surveys ($P = .22$). The overall trend has been for declining ICU privileges for all 3 cohorts of graduates, with the earliest graduates showing the most marked decline (CMH $P = .02$, Table 4). Compared with earlier cohorts, 1994 to 2003 graduates were least likely to provide primary care for their patients in the emergency department (7.4%, $P = .06$; Table 3). Providing primary care for their patients in the emergency department declined across time for those who responded to all 3 surveys as well (25.9% in 1998, 16.7% in 2001, 13.0% in 2004; $P = .014$). This decline was noted for all 3 graduation cohorts as well (CMH $P < .001$; Table 4). All 3 groups of graduates in rural practices provided primary care for their patients in the Emergency Room more often than their urban counterparts (CMH $P = .026$; Table 4).

Procedures

Overall, our graduates are performing fewer procedures than in the past (Table 3). Flexible sigmoidoscopy and colposcopy were the most common procedures performed by residency graduates. Performance of flexible sigmoidoscopies was less common among recent graduates ($P = .02$), whereas colposcopy showed no trend ($P = .53$). Graduates who responded to all 3 surveys showed a significant decline in performing flexible sigmoid-

oscopies (35.2% in 1998, 29.6% in 2001, 21.3% in 2004; $P = .024$), but performance of all other procedures remained constant. The contrast between male and female graduates performing flexible sigmoidoscopies is quite striking (Table 4). Female graduates were much less likely to perform flexible sigmoidoscopies at all 3 time points (CMH $P < .001$). All 3 cohorts reported a decline in performing flexible sigmoidoscopies over the 3 surveys; the most recent graduates (1994 to 2003) were least likely to perform flexible sigmoidoscopies at all 3 surveys (CMH $P = .002$; Table 4). Colposcopy was performed by a greater proportion of all groups of graduates located in rural areas (CMH $P = .026$; Table 4).

Practice Characteristics

There was no clear trend in the number of hours worked each week, but the latest group of graduates was the most likely to have more than 4 days of call per month (57.6%), while the earliest cohort was the most likely to have none ($P = .03$; Table 3). The proportion of respondents assuming risk in managed care contracts, having an office manager, and negotiating their own managed care contracts was not significantly related to time since graduation. Assuming risk did decline among those who responded to all 3 surveys (43.5% in 1998, 26.8% in 2001, 27.8% in 2004; $P = .014$). All 3 groups of graduates in rural locations assumed risk more often than their urban counterparts (CMH $P = .013$; Table 4). Teaching medical students and residents is common among our graduates and has remained stable over time, although there is a trend for declining involvement in teaching residents ($P = .08$).

Training Needs

The most common areas for which graduates indicated that more training would have been beneficial were practice management and procedural skills (Table 5). The proportion of graduates expressing a desire for more training in practice management has increased with time, from 14.9% of 1975 to 1983 graduates to 31.9% of 1994 to 2003 graduates ($P = .009$). Perceived need also increased for pediatric inpatient medicine ($P = .004$) and ICU/MICU ($P = .01$), and decreased for geriatrics ($P = .002$). The perceived need for more training in routine inpatient obstetrics declined among recent graduates ($P = .03$) whereas the need for high-risk inpatient obstetrics increased ($P = .03$).

Table 5. Topics for Which Graduates Believe More Training Would Have Been Helpful*

Topic†	Year of residency graduation			P Value‡
	1975 to 1983	1984 to 1993	1994 to 2003	
Adult inpatient medicine	0.0	1.0	5.3	.02
Pediatric outpatient medicine	0.0	5.1	5.3	.11
Pediatric inpatient medicine	0.0	5.1	10.6	.004
Prenatal care	1.5	1.0	0.0	.27
Inpatient OB (routine)	7.4	2.0	1.1	.03
Inpatient OB (high risk)	1.5	5.1	9.6	.03
Emergency medicine	0.0	1.0	1.1	.48
ICU/MICU	4.5	9.2	17.0	.01
Geriatrics	14.9	4.1	2.1	.002
Behavioral science	7.5	3.1	3.2	.23
Practice management	14.9	20.4	31.9	.009
Procedural skills	11.9	27.6	20.2	.33
Cross-cultural medicine	3.0	3.1	2.1	.72
Use of computers in medicine	7.5	12.2	9.6	.76
Nursing home medicine	13.4	5.1	6.4	.14
Orthopedics	3.0	7.1	5.3	.61

* For respondents who returned more than one survey, a positive response on any survey was included. N = 259 respondents.

† Responses to open-ended question, "For areas in which you did not feel adequately prepared, what specific additional training would have been helpful."

‡ Mantel-Haenszel χ^2 test for trend.

Discussion

The purpose of this study was to identify changing practice patterns in graduates of our family medicine residency program. Stratified analysis showed that over the last 6 years, the proportion of graduates practicing inpatient medicine and obstetrics and performing procedures has declined. It is unclear whether these trends reflect the changing practice environment dictating scope of practice, or if experiences during residency training are impacting career choices. Although changes in faculty role models and residency curriculum may have influenced cohorts differently, the program director and a majority of the faculty have not changed over the last 10 years. We believe that the trends are unlikely to be related to educational experiences since they are occurring across all 3 graduation cohorts simultaneously. Further, our graduates perceive that they should have had more training in some skills such as practice management, but did not identify a need for more training in prenatal care, routine obstetrics, or procedures. In either case, these trends require us to question the distribution and the nature of training during family medicine residency. It would seem prudent for RRC accreditation requirements, American Board of Family Medicine certification require-

ments, Future of Family Medicine (FoFM) recommendations, and graduate practice patterns to have some congruence.

Several papers have compared practice patterns of graduates of family medicine residencies. Frisch et al⁷ surveyed graduates of 3 family medicine residency programs every 2 years from 1992 to 2000. They traced practice locations and relocations from initial practice sites. Almost half of graduates moved at least once, and usually these moves were to a less rural location. In contrast, our study found that rural location remained stable across surveys, and that the proportion of graduates in rural communities has increased for more recent graduates. This may reflect our departmental mission to train physicians for rural areas. Frisch's study identified trends over time, but only looked at practice demographics and not scope of practice. Carek et al⁸ surveyed 1335 graduates of South Carolina Area Health Education Consortium-affiliated family medicine residency programs. Graduates of community-based and university-based programs were compared. Community-based graduates were more likely to practice in a rural area and closer to their residency location, whereas university-based program graduates were more likely to enter academics. The type of procedures performed did not vary

by practice location. In contrast, our study found that graduates in rural areas were more likely to care for hospital inpatients, practice obstetrics, have ICU privileges, and perform colposcopy.

Chaytors et al⁹ conducted a cross-sectional questionnaire of 702 graduates who completed a family medicine residency program in Alberta, Canada between 1985 and 1995. They found that fewer procedures were performed in metropolitan areas and that female graduates did fewer procedures (with the exception of intrauterine device insertion and obstetrical care). Similarly, our study found that women were less likely to perform flexible sigmoidoscopies, and there was a nonsignificant trend for increased performance of colposcopy.

A cross-sectional survey of graduates of University of Washington-affiliated residency programs done by Kim et al¹⁰ in 2000 found that 79% were caring for patients in the hospital compared with 63% in our study in 2001. They also found that, overall, 63% practiced obstetrics and even in larger cities, 58% still delivered babies. In contrast, we found that in rural areas only 35% of our recent graduates were delivering babies and that all 3 graduation cohorts have shown a marked decline in obstetrical practice since 1998. Our study was able to demonstrate this declining trend whereas the Washington data are cross-sectional. There may also be regional differences based on practice location and malpractice insurance rates.

The American Academy of Family Physicians (AAFP) surveys its membership annually.¹¹ From 1998 to 2003 their surveys found that the percentage of physicians practicing obstetrics declined from 31.6% to 21.8%. This is remarkably consistent with our results. In addition, our graduates care for patients in the hospital at rates similar to national rates. In contrast, our graduates are performing fewer procedures than those reported by practitioners in the most recent AAFP practice profile survey.

Interestingly, these trends are in conflict with some of the recommendations made in the FoFM report. The new model of care identified by the FoFM emphasizes a “basket of services” that includes maternity care, hospital care, and a range of diagnostic and therapeutic procedures.¹² This suggests a disparity between FoFM recommendations and the trends in graduates’ actual practice patterns. A 1997 survey of residency programs found

that residencies were teaching many more procedures than graduates were actually performing.¹³ These inconsistencies should be explored and reviewed to determine possible causes.

This study is limited in that it only queried graduates from one residency program. The trends identified may not be generalizable to graduates of other geographical areas or from programs of different structures. However, the program studied is large, recruits nationally, and has graduates practicing across the nation. A second limitation of this study is the self-reporting nature of the survey instrument. Finally, although the overall response rate remains high, the rate has declined over time. However, a high proportion of our graduates (87.2%) returned at least one survey, generating data that are representative of our program.

This study had several strengths. Six years of longitudinal data lend validity to the trends identified, and the high response rate has provided a large data set to evaluate. Furthermore, persons from each of our 30 graduating classes responded, providing valuable contrasts between cohorts of graduates. Another strength is that the survey format remained essentially unchanged during the study period. In addition, the comprehensive nature of the survey provides rich insight into the practice patterns of our graduates.

Conclusion

Determining the appropriate content for family medicine residency training remains challenging as we try to predict the knowledge and skills that graduates will need in their future practice environments. We question the impact of our current residency curriculum on graduates’ practice selection. Data regarding residency graduates should be used to align FoFM recommendations and RRC curricular requirements with actual practice patterns.

This study identified changing practice patterns in graduates of the University of Missouri-Columbia family practice residency program. Fewer graduates are practicing obstetrics, inpatient medicine, and performing procedures. The study highlights the difficulty in predicting the knowledge and skills that residency graduates will need in their future practice environments and how those practices may change drastically with time. Data regarding residency graduate practice profiles should be used to assess the FoFM recommendations.

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