Residency Education

Recruiting Faculty to Perform Deliveries in Family Medicine Residencies: Results of a Residency Program Survey

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Background and Objectives: *One factor cited for the decline of family physicians delivering babies is a lack of faculty role models during residency training. This study's purpose was to determine how many residency programs experience difficulty recruiting faculty who perform deliveries and whether financial or not financial compensation are associated with recruiting difficulties.* Methods: *Using an electronic questionnaire, we surveyed program directors of nonmilitary family medicine residencies in the United States, with a response rate of 60.7%.* Results: *Among residency programs who tried to recruit faculty with delivery skills, 58% stated that they have difficulties. Two program characteristics were associated with recruitment difficulties: the number of delivery providers among faculty and whether the residency program directors included delivery in their own practices. There were no statistically significant associations between recruiting difficulties and any type of financial reimbursement methods, but nonfinancial incentives were offered more often by programs that had no difficulty recruiting.* Conclusions: *More than half of all family medicine residency programs have difficulty recruiting faculty members to provide delivery training. Changing the type of financial compensation for faculty providing maternity care is not likely to assist in recruiting. However, we did find that programs without recruiting difficulties were more likely to offer nonfinancial incentives to faculty members who perform deliveries.*

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Nationwide, the percentage of family physicians who perform obstetrical deliveries has dropped by almost one third in the last 20 years, going from 43% in 1986 to 29% in 2005.[1] Numerous factors have been considered to explain the decline of numbers of family physicians performing deliveries.

One factor contributing to this decline may be the level or quality of education and training during residency. Taylor and Hansen identified several characteristics of residency programs in which training to perform deliveries was perceived to be successful in producing a large number of graduates who include deliveries in the scope of their practices. That study attributed success to characteristics of the family physician faculty and the teaching service.[2] The presence of adequate family physician role models during training, supervision of resident deliveries by family medicine faculty, and having family medicine faculty who could manage complicated vaginal deliveries were positively associated with the inclusion of obstetrics in residents' future practices.[3-5] Murrain and colleagues concluded that the hiring of faculty family physicians performing deliveries as role models has a positive effect on resident training by augmenting both the continuity and total number of deliveries performed by residents.[6] Starting in 1997, the Residency Review Commission (RRC) stipulated that all family medicine residencies have at least one family physician to serve as an intrapartum attending physician for resident deliveries.

While programs are now required to have a family physician faculty member who performs deliveries, it may be more difficult to meet this requirement as the number of family physicians who perform deliveries

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declines. This study's purpose was to explore how many residency programs experience difficulty recruiting faculty members with delivery skills. In addition, we sought to determine whether the reimbursement for labor and delivery among family medicine academic practices was associated with recruiting difficulties.

Methods

Subjects

We targeted all family medicine residency programs in the United States for participation in the study. A list of all family medicine residency program directors' or coordinators' e-mail addresses was complied from the 2005 *Directory of Family Practice Residency Programs* on the Web site, www.aafp.org/residencies/, and each e-mail address was verified with the 2005 *Directory of Family Practice Residency Programs*.[7,8] From 457 residency programs listed, 450 e-mail addresses were available. Sixteen e-mail addresses were not valid. The electronic survey was sent to 434 residency program directors or coordinators, and 10 declined to participate.

To track programs that completed the survey, a confidential study-specific identification number was assigned to each program. Nonrespondents were reminded of the invitation through three additional e-mail contacts. We received final responses from 257 of the 424 residency programs, for a response rate of 61% (Figure 1).

Instruments

We constructed an Internet-based questionnaire that was directed to residency program directors or pregnancy care coordinators (Appendix 1). To evaluate whether a program had difficulty recruiting new faculty with delivery skills, we asked, "Have you had difficulty in recruiting faculty providing maternity care?" Respondents could respond either "yes," "no," or indicate that they had not tried to recruit any faculty with these skills. We did not define what "difficulty" meant but allowed program directors or their staff the ability to self-determine whether they had problems. When we pilot tested the instrument with program directors, none expressed difficulty understanding the question or assessing what recruitment difficulty was. Because we wanted to examine factors that influenced faculty recruiting difficulties, we limited our analyses only to programs that had tried to recruit faculty with maternity care skills.

We then asked about both program characteristics and types of reimbursement to see whether either of these were associated with recruiting difficulties. First we asked respondents to provide estimates of the size of the residency program, geographic location, number of deliveries per year, number of faculty providing pregnancy care with deliveries, the range of labor and delivery skills, and whether the director of the residency program or the department chair performs deliveries.

In constructing the questions for reimbursement issues, we performed a MEDLINE search to identify incentive methods most commonly used to describe physicians' reimbursement. From the characteristics identified in the literature as being potentially important, a list of six financial characteristics was compiled. We then asked about whether any financial or nonfinancial incentive was provided, as well as individual types of financial or nonfinancial reimbursement provided.

The survey and method was reviewed and judged to be exempt from formal review by the Medical University of South Carolina Institutional Review Board.

Data Analyses

Survey responses were analyzed using descriptive statistics. To determine whether the respondents were likely to be geographically representative of all residency programs, we divided existing programs and the respondents into four geographic regions according to the Census Bureau data. To evaluate whether the association between the number of delivery providers and trouble recruiting was independent of whether the program director participated in maternity care, we stratified the respondents based on whether the program director participated in maternity care or not. We performed comparisons of the programs with and without recruitment difficulties using Pearson's chi-square statistics. When we performed stratified analyses, we used Mantel-Haenszel Summary Chi-square. The margins of error for the comparisons were obtained by calcu-

Figure 1

Organizational Chart of the Survey

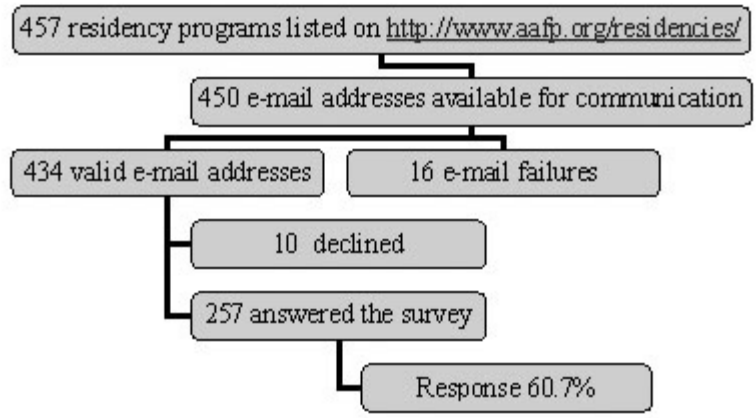

Table 1

Characteristics of the Responding Residency Programs

Program Characteristic	*n=257 n (%)*
Program location by census division*	Response rate
Northeast	49 (61%)
Midwest	87 (63%)
South	71 (49%)
West	50 (63%)
Residents per year	
<5	25 (10%)
6–10	166 (65%)
>11	69 (27%)
Average numbers of deliveries per year	
<100	70 (27%)
100–200	94 (37%)
201–300	36 (14%)
>300	57 (22%)
Prenatal care with/deliveries	246 (96%)
Call schedule—average number of night calls per month	
<4	65 (26%)
4–6	113 (44%)
7–9	48 (18%)
>9	30 (12%)
Program director includes maternity care in his/her practice	132 (51%)
Department chair includes maternity care in his/her practice	26 (22%)

* Geographic divisions were defined as follows:
Northeast: Conn, Me, Mass, NJ, NH, NY, Pa, RI, Vt
Midwest: Ill, Ind, Iowa, Kan, Mich, Minn, Mo, Neb, ND, Ohio, SD, Wis, Puerto Rico
South: Del, Fla, Ga, Md, NC, SC, Va, WV, Ala, Ky, Miss, Tenn, Ark, La, Okla, Tex
West: Alaska, Ariz, Calif, Colo, Hawaii, Idaho, Mont, NM, Ore, Utah, Wash, Wyo

lating the 95% confidence intervals for the differences between the group proportions. A *P* value of less than .05 was considered statistically significant.

Results

We received 257 responses from the 424 program directors or pregnancy care coordinators, for a response rate of 60.7%. The response rate by geographic region ranged from 49% to 63% (Table 1).We found no statistically significant difference between distribution of the residency programs and the response rate among geographic regions.

The characteristics of the respondents are shown in Table 1. Most residencies (65%) have 6–10 residents per postgraduate year (PGY). The median number of deliveries was estimated between 100 and 300 per year, with the 37% of programs stating that they deliver between 100 and 200 babies per year.

Faculty Involvement

The greater part of respondents (70%) noted that faculty members are expected to do six or fewer call nights per month.

Slightly more than half of all program directors (51%) include pregnancy care as part of their practice, while a lower percentage (22%) of department chairs continue to provide maternity care. Only a few programs have a faculty member who had fellowship training in obstetrics/maternity care. The spectrum of inpatient delivery room services performed by faculty besides vaginal deliveries included vacuum extractions (87%), forceps deliveries (37%), ultrasound evaluations (46%), and cesarean sections (18%).

Incentives

More than one third of programs do not offer any financial incentives for deliveries in addition to a regular salary. However, 81% of residencies include a financial incentive for maternity care in the faculty member's base salary. Among those that offer an additional incentive, almost half of the surveyed programs offer faculty reimbursement per delivery. In 21% of the residencies, compensation is based on the relative value units system. Three percent of programs include a signing bonus for faculty members who perform deliveries. In addition, nearly one third of programs offer nonfinancial incentives such as a day or half day off work, added extra days to vacation time, paid continuing education, or a decreased number of other family medicine call nights.

Recruitment

Among residency programs looking to hire faculty members who include deliveries in their practice, 126 (58%) stated that they have difficulties with recruiting such faculty. Our analysis of the programs with and without recruitment difficulties showed that there are two factors strongly associated with recruitment difficulties. First, programs with recruitment difficulties have a smaller number of delivery providers ($P<.001$) (Table 2). Second, programs having difficulty recruiting are less likely to have residency program directors who includes deliveries in their practice ($P=.001$).

After stratifying the responses based on program director participation deliveries, the number of delivery providers remained statistically significant ($P<.001$).

Table 2

Comparison of Residencies With and Without Recruiting Difficulties

	Programs Without Recruitment Difficulties n=91 # (%)	*Programs With Recruitment Difficulties n=126 # (%)*	P *Value*
PROGRAM CHARACTERISTICS			
Residents Per Year			.24
<5	7 (8%)	13 (10%)	
5–10	62 (69%)	72 (57%)	
>11	21 (23%)	41 (33%)	
Average number of deliveries per year			.08
<100	18 (20%)	40 (33%)	
100–200	33 (34%)	46 (36%)	
201–300	17 (19%)	13 (11%)	
>300	24 (27%)	24 (20%)	
Number of physicians faculty providing deliveries			< .001
<5	21 (23%)	69 (59%)	
5–10	43 (47%)	43 (36%)	
>10	19 (21%)	5 (4%)	
Average number of faculty night calls per month			.18
<4	21 (23%)	30 (26%)	
4–6	48 (52%)	49 (42%)	
7–9	18 (19%)	22 (16%)	
>9	6 (6%)	18 (16%)	
Residency program director providing maternity care	58 (64%)	51 (41%)	.001
Residencies with department chair providing maternity care	11 (28%)	11 (18%)	.45
TYPES OF INCENTIVES			
No financial or other incentives	57 (64%)	75 (64%)	.99
Payment for each delivery	28 (32%)	36 (31%)	.92
Amount of pay per delivery			.30
$100–$300	14 (50%)	13 (36%)	
$301–$500	9 (32%)	13 (36%)	
$501–$700	4 (14%)	4 (11%)	
$700–$1,000	0 (0%)	5 (14%)	
>$1,000	1 (4%)	1 (3%)	
Other types of incentives			
Annual bonus	9 (10%)	17 (15%)	.38
Incentives included in the base salary	32 (36%)	51 (44%)	.42
Incentives based on RVUs	10 (11%)	16 (14%)	.70
No financial incentives	31 (35%)	39 (33%)	.63
Other nonfinancial incentive	18 (20%)	9 (8%)	.005

RVUs—relative value units

Otherwise, there were no statistically significant differences among size of the programs, number of deliveries per year, call schedule. or type of the compensation provided.

When we explored whether financial incentives influence recruiting difficulties, we found no statistical differences in reimbursement methods between the programs with and without recruiting difficulties of maternity care providers (Table 2). However, we did find that programs without recruiting difficulties were more likely to offer nonfinancial incentives to faculty members who provided maternity care (20% versus 8%, P=.005).

Discussion

Our study showed that more than half of residency programs that tried to recruit new faculty have difficulties recruiting faculty who included deliveries in their scope of practice. The two factors associated with recruitment difficulties were the existing number of faculty that practiced deliveries and whether residency program directors did so. Offering financial incentives was not associated with recruiting problems, but programs not experiencing difficulty with recruiting were more than twice as likely to offer nonfinancial incentives to providing maternity care.

The implications of this study are worrisome for the future of pregnancy care in family medicine. With fewer family physicians with delivery skills available for faculty positions, recruitment difficulties are likely to grow even more difficult. The lack of role models during residency may lead to fewer residency graduates who perform deliveries, which in turn will exacerbate the existing shortage of faculty, and this may result in a continued spiraling downward of the percentage of family physicians performing deliveries.

Our finding that increased compensation does not seem to influence whether a program has difficulty recruiting faculty with maternity skills suggests that the seemingly simplest solution to this problem (ie, throwing money at it) might not be successful. It appears that for faculty, monetary considerations, at least within the range currently offered by residency programs, do not seem effective in attracting faculty who can provide maternity care. On the other hand, programs offering nonfinancial incentives appeared to have less difficulty with recruitment. Consequently, programs may want to explore with potential faculty members what kinds of nonfinancial incentives might attract more faculty members who have maternity skills. However, in some situations in which the institution, community, and other health care providers are unsupportive of family physicians performing deliveries, no level of inducement will be adequate to attract faculty members to what may be a hostile environment.

Our second finding, that programs with more faculty and where the program director performs deliveries have less difficulty recruiting new faculty, is not surprising. Both of these factors likely represent programs in which pregnancy care is part of the value system of the program and viewed as a core skill of family physicians. Prospective faculty members with delivery skills who are seeking a teaching position are likely to favor programs that have the same perspective on family medicine as they do. While it may look like a situation where "the rich get richer," perhaps a better way of interpreting this finding is that prospective faculty members who have delivery skills look for a residency culture that reflects their own values. Programs in which many or all faculty, including the leadership, include deliveries in their practice are more likely to have that culture. It also may be hard to determine whether the negative influence of having a smaller number of maternity providers could be the cause or the result of recruitment difficulties.

Limitations

There are, however, several limitations to this study. First, selection bias may have occurred because of the electronic method of delivery of questionnaires. However, electronic survey research shows that the results of electronic surveys are comparable with paper-based surveys.

Second, we assumed that our survey was reaching the person best able to provide the appropriate information. But the Internet addresses of the residency programs published on the AAFP Web site and in the AAFP 2005 *Directory of Family Practice Residency Programs* generally do not include the residency program directors' e-mail addresses. In most cases, our surveys likely were screened by residency program coordinators and forwarded to residency program directors or pregnancy care coordinators. However, we have no way of verifying that the residency program director or pregnancy care coordinator actually did complete the questionnaire.

In addition to the above limitations, we need to consider that residency programs that place a greater emphasis on deliveries may have been more likely to respond to the survey. This bias might lead us to underestimate the number of programs that are having difficulty recruiting new faculty with maternity skills.

Additionally, the data provided in the survey are based on the subjective opinions and estimates of maternity care coordinators and residency directors. We had no way to assess what a residency director considers difficult when recruiting new faculty or to validate whether programs actually attempted recruitments. We considered recruitment difficult if the "unfulfilled position of physician faculty, willing to do maternity care, persisted for some time, causing extra work for the rest of the faculty." During the piloting of the survey, the residency program directors did not express a problem

with understanding this term. In the survey, this question was answered by 100% of the respondents.

Finally, the respondents were limited to a set menu of incentives contained on the questionnaire. It may be that some combination of incentives could be more successful than individual options provided on our questionnaire.

Conclusions

In summary, this study suggests that nearly 60% of all family medicine residencies have difficulty recruiting new faculty members with delivery skills. While programs are now required to have a family physician faculty member who performs delivery, for programs with a small number of maternity care providers it may be necessary to include community family medicine physicians in the call schedule to meet the requirement. Future research is needed to determine what other factors influence faculty to include pregnancy care in their practices.

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Appendix 1

Compensation for Maternity Care Among Physicians in Academic Family Practices Survey

1. How many residents per year are in the program?
   <5 5–10 >11
2. How many physician faculty in your program provide the following services?
   Prenatal care with deliveries
   Prenatal care without deliveries
   Precepting pregnant patients, seen by residents
   No prenatal care
3. Does residency program director provide maternity care (prenatal care with deliveries)?
   Yes No
4. If an academic department in a medical school, does the chair of the department provide maternity care (prenatal care with deliveries)?
   Yes No
5. Have you had difficulties in recruiting family medicine faculty providing maternity care?
   Yes No Have not tried to recruit
6. How many of your current maternity care providers have had a fellowship in obstetrics?
   0 1 2 3 4 5 >5
7. What obstetrical hospital privileges do your maternity care providers have? Mark all that apply.
   Vaginal deliveries _____
   Cesarian sections _____
   Vacuum extraction _____
   Forceps deliveries _____
   Ultrasound evaluations _____
   Other (please specify) _____
8. What is the average number of OB call nights your physician faculty takes per month?
   <4 5 6 7 8 9 >9
9. What is the average number of deliveries per year for your program?
   Average number of deliveries per year___
10. What type of financial reimbursement do physician faculty receive for maternity care? Mark all that apply.
    Signing bonus _____
    Pay per delivery _____
    Annual bonus _____
    Included in the base salary _____
    Based on relative value units _____
    None beside regular salary _____
11. Do physician faculty have nonfinancial incentives for prenatal care with deliveries? Mark all that apply.
    Day off work _____
    Added extra days to vacation time _____
    Paid CME _____
    Other (please specify) _____