

Factors Influencing Changes in Obstetric Care Provided by Family Physicians: A National Study

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In an effort to determine the factors underlying changes in obstetric practice by family physicians, a random sample of 505 residency-trained family physicians was surveyed by mailed questionnaire. Of the 329 who responded, 65% had at some time practiced obstetrics, but only 45% were practicing obstetrics at the time of the survey. Rising malpractice insurance premiums and fear of lawsuit were factors most likely to influence a family physician's decision to cease obstetric practice. Lifestyle concerns and the number of obstetricians practicing in the area were also important factors for all family physicians. Important differences were found between family physicians who never delivered babies and those who had at some time practiced obstetrics. Family physicians who have given up obstetric practice were found to feel well trained and competent in this practice. Since changes in obstetric practice patterns have had an adverse effect on the obstetric care of women in rural areas and for the medically indigent, these findings have important public health implications.

Family physicians provide a large portion of the obstetric care in the United States, especially in rural areas. The need for family physician involvement with obstetric care in this country is recognized by both the American College of Obstetricians and Gynecologists (ACOG) and the American Academy of Family Physicians (AAFP).¹ Despite this need, however, several regional studies indicate decreasing participation in obstetric care by family physicians.²⁻⁴ This narrowing of the spectrum of care delivered by family physicians has already adversely affected the delivery of obstetric care in rural areas.^{3,5} Such factors as rising malpractice insurance premiums, fear of litigation, increasing concern about the effects of delivering babies on physician lifestyle and office practice, and the rapidly changing technological aspects of modern obstetric care have all been cited as reasons for the decrease in obstetric care offered by family physicians.²⁻⁶

Significant differences in obstetric practice patterns by family physicians exist in different geographic regions of

the country,⁷⁻⁹ and it has been suggested that differences in practice patterns also exist between family physicians in urban and rural areas. At this time there is no information regarding the factors that influence the type of obstetric services offered by family physicians from a national perspective or one comparing the various regions of the country.

The purpose of this study was to describe the current status of obstetric practice by family physicians in the United States and to determine which factors influence patterns of obstetric practice by family physicians at a national level.

METHODS

This study was part of a larger project that examined the attitudes of family physicians and obstetricians toward the practice of obstetrics by family physicians. The study population consisted of members of the American Academy of Family Physicians. A computer-generated random sample of 505 residency-trained family physicians was surveyed with mailed questionnaires using Dillman's survey methodology.¹⁰ The first mailing occurred in October 1987, with two subsequent mailings at 3-week intervals to those who had not previously responded.

Information obtained by the questionnaire included ba-

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TABLE 1. CURRENT STATUS OF OBSTETRIC PRACTICE BY FAMILY PHYSICIANS

Status of Obstetric Practice	Number
Total sample	329
Not currently delivering babies	182
Never delivered babies	115
Delivered babies initially, then stopped	67
Currently delivering babies	147
Did not deliver babies initially, then started	5
Always delivered babies, giving consideration to stopping	70
Always delivered babies, have not considered stopping	72
Active obstetric practice 12 months prior to receiving questionnaire	167
Stopped delivering babies in past 12 months	20

sic demographic information, state of residency training, years in practice, size and location of community of practice, type of practice, number of babies delivered in the previous 12 months, and types of obstetric services offered initially and at the present time. In addition, physicians were asked to rate, on a 6-point Likert scale, their level of preparation to deliver babies at the end of their residency. On this scale 1 represented "totally unprepared" and 6 represented "very well prepared."

Family physicians who had never practiced obstetrics, those who had discontinued obstetric practice, and those who had ever considered discontinuing obstetric practice were asked to rate the importance of ten factors that may have influenced them to stop or consider stopping the obstetric portion of their practice. These factors were (1) interference with lifestyle, (2) no previous interest in delivering babies, (3) inadequate obstetric training, (4) interference with office practice, (5) malpractice insurance premiums, (6) fear of lawsuits, (7) low financial incentive, (8) difficulty with obstetricians' attitudes, (9) difficulty keeping up with advances in obstetrics, and (10) inadequate obstetric volume. The physicians rated the importance of each factor, also on a 6-point Likert scale, with 1 indicating that the factor was not at all important and 6 indicating that the factor was very important.

For purposes of analysis, five geographic regions of the nation were identified. Those regions, the number of states included in each, and the estimated 1985 census of those regions are as follows: East (11 states and the District of Columbia; 55,475,000), South (12 states; 56,531,000), Midwest (8 states; 53,660,000), Plains/Mountain (14 states; 37,948,000), and West Coast (5 states, 34,957,000). For each state and region, the birth rate (live births per 1,000 population) and obstetrician density (obstetricians per 100,000 population) were calculated based upon 1985 United States census estimates and the 1985 American

College of Obstetricians and Gynecologists membership lists.

To determine significant differences between means for dichotomous variables, *t* tests were used. For other variables one-way analysis of variance was used to test for significant differences.

RESULTS

Thirteen of the sample could not be reached by the mailings, leaving an effective sample size of 492. A total of 329 physicians responded, for a response rate of 67%.

The median age of the respondents was 36 years, and 83% were male. They had completed an average of 6.0 years in practice, and 70% had completed their residency in 1980 or later. The mean population of the community in which the physicians practiced was 36,000. Thirty-one percent practiced in communities with populations of less than 15,000 and 26% practiced in communities with populations of more than 100,000 people. Almost one half of the physicians (164 of 329) reported delivering no babies in the 12-month period prior to the survey. Of those delivering babies, 32% delivered fewer than 25 babies, 36% delivered 25 to 49 babies, 28% delivered 50 to 99 babies, and 4% delivered more than 100 babies in the 12 months prior to the survey. For family physicians who delivered babies, the mean number of deliveries was 39.2.

The current status of obstetric practice by responding family physicians is summarized in Table 1. One hundred fifteen of the total sample of 329 (35%) had never delivered babies after completing residency. Another 67 had given up the obstetric portion of their practice, leaving 147 (45%) currently delivering babies at the time of the survey. Almost one half of those physicians currently delivering babies are considering stopping the obstetric portion of their practice. Table 1 also shows that family physicians are giving up the obstetric portion of their practice at a rapid rate. Twenty of the 167 physicians who were engaged in active practice 12 months prior to this survey (12%) gave up the obstetric portion of their practice in the subsequent 12-month period.

The type of obstetric services provided by the family physicians is shown in Table 2. At the beginning of their practice, 47% of the family physicians delivering babies described their obstetric services as uncomplicated obstetrics only, 24% practiced complicated obstetrics but did not perform cesarean sections, and 15% practiced complicated obstetrics and performed cesarean sections. As family physicians have discontinued obstetric practice over time, the proportion leaving each of these categories has been similar.

In general, the family physicians in this sample felt well prepared to practice obstetrics at the conclusion of their residency. Fifty-eight percent of the physicians indicated that they felt well prepared by checking either 5 or 6 on the 6-point Likert scale described earlier. Only 8% indicated a low level of preparation by checking 1 or 2.

TABLE 2. OBSTETRIC SERVICES PROVIDED BY FAMILY PHYSICIANS AT THE BEGINNING OF PRACTICE AND CURRENTLY

Type of Obstetric Services	Beginning Practice (N = 329)			Now (N = 328)		
	No.	Percent of All Family Physicians	Percent of Family Physicians Who Deliver Babies	No.	Percent of All Family Physicians	Percent of Family Physicians Who Deliver Babies
No obstetrics	120	36	—	185	56	—
Uncomplicated obstetrics	99	30	47	68	21	48
Complicated obstetrics (no cesarean section)	78	24	37	54	16	38
Complicated obstetrics (with cesarean section)	32	10	15	21	6	15

TABLE 3. CHARACTERISTICS OF OBSTETRIC PRACTICE BY FAMILY PHYSICIANS BY REGIONS OF THE UNITED STATES

Characteristic	East (N = 54)	South (N = 75)	Midwest (N = 87)	Plains/ Mountain (N = 38)	West Coast (N = 55)
Ever offered obstetric services (%)	46	51	69	72	89
Discontinued obstetric practice (%)	17	18	22	12	27
Currently offer obstetric services (%)	30	32	47	60	62
Birth rate*	14.5	15.1	15.1	18.4	17.8
Obstetrician density†	14.9	11.0	10.5	10.0	13.2

*Number of live births per 1000 people in 1985. (From United States Census Statistical Abstracts, 1987)

†Number of obstetricians per 100,000 people in 1985

The perceived level of preparation was compared with the current status of obstetric practice. Those who had never practiced obstetrics had the lowest perceived level of preparation, with the mean score of 3.83. Those who continued to deliver babies had a higher level of preparation, with a mean score of 4.64. Those who had stopped delivering babies had the highest perceived level of preparation with a mean score of 4.90. Each of these means differed significantly from the other two ($P < .05$ by two-tailed t test). It seems that those family physicians who are discontinuing obstetric practice are a group of physicians who feel well prepared to do it.

The percentages of family physicians who offered obstetric services immediately upon completion of residency differ significantly by geographical region. A relatively low percentage of physicians in the East and the South regions reported ever having offered obstetric services, 46% and 51%, respectively. The percentages were significantly higher for the other three regions: Midwest 69%, Plains/Mountain 72%, and West Coast 89%. Because the percentage of physicians who gave up the obstetric portion of their practice is relatively constant throughout the country, a

wide disparity exists in percentages of physicians currently delivering babies in the various regions, ranging from a high of 62% in the West Coast region to a low of 32% in the East. These results are shown in Table 3.

The relative importance of factors that may influence family physicians to discontinue obstetric practice is shown in Table 4. By far the most important factor cited was high malpractice insurance premiums, with a mean score of 5.00, and 73% citing the factor as important. A relatively high percentage also cited interference with lifestyle, fear of litigation, and interference with office practice as important factors. The other factors, low financial incentives, difficulty keeping up with advances in obstetrics, difficulty with obstetrician's attitudes, inadequate training, and so on, were relatively less important. It is noteworthy that few family physicians cited inadequate training or difficulty in keeping up with technologic changes in obstetrics as important factors in their decision to stop delivering babies.

Rising malpractice insurance premiums and fear of lawsuits generated many more extreme opinions than did the issues of interference with lifestyle or interference with office practice. The highest score of 6 was listed for mal-

TABLE 4. FACTORS INFLUENCING THE DECISION TO DISCONTINUE OR TO CONSIDER DISCONTINUATION OF OBSTETRIC PRACTICE (US Family Physicians, 1987) (N = 256)

Factor	Mean Score*	Percent Citing Factor Important†	Percent Citing Factor Very Important††
Malpractice premiums	5.00	73	49
Interferes with lifestyle	4.48	57	20
Fear of litigation	4.37	53	34
Interferes with office	3.76	38	12
Low financial incentive	3.30	22	8
Insufficient number of deliveries	3.02	20	10
Difficulty keeping up with advances	2.92	16	2
Difficulty with obstetrician attitudes	2.83	20	8
Inadequate training	2.50	13	5
Never interested in obstetrics	2.06	10	4

*1—Not at all important, 6—Very important
 †A factor was considered "important" if 5 or 6 was indicated.
 ††A factor was considered "very important" if 6 was indicated.

TABLE 5. COMPARISON OF FACTORS BY STATUS OF OBSTETRIC PRACTICE (Mean Scores, Range 1 to 6)

Factor	A	B	C	Significant Associations*
Malpractice premiums	4.89	5.00	5.14	—
Interferes with lifestyle	4.65	4.19	4.50	—
Fear of lawsuit	4.47	4.33	4.28	—
Interferes with office practice	4.33	3.36	3.19	A,B; A,C
Low financial incentive	3.30	3.30	3.32	—
Insufficient number of deliveries	3.21	3.00	2.68	—
Difficulty keeping up with advances	3.27	2.66	2.53	A,B; A,C
Difficulty with obstetrician attitudes	3.15	2.45	2.64	A,B
Inadequate training	3.04	1.80	2.20	A,B; A,C
Never interested in obstetrics	2.64	1.68	1.38	A,B; A,C

A—Never delivered babies (N = 115)
 B—Initially delivered babies, then stopped (N = 67)
 C—Currently delivering babies, giving consideration to stopping (N = 73)
 *t test, P < .05

practice insurance premiums by 49% of the physicians and for fear of lawsuits by 34%. The extreme opinions were less marked for interference with lifestyle (20%) and for interference with office practice (12%).

The relative importance of the various factors was also examined with respect to other characteristics of the physician. A comparison of the attitudes of the physicians currently delivering babies, those who never delivered babies, and those who have stopped delivering babies is shown in Table 5. The effect of malpractice insurance premiums and a fear of lawsuit was similar for each of these groups. There were, however, significant differences in attitudes for those physicians who had never delivered babies, compared with the other two groups for the less important factors. This group cited less adequate obstetric training, more difficulty with obstetrician's attitudes, and more difficulty in keeping up with changes in obstetrics.

Since the attitudes of the family physicians who never delivered babies differed significantly from the attitudes of

the physicians who stopped delivering babies, two further comparisons were made. First, the various factors influencing obstetric practice were compared for physicians who never delivered babies and for those who had ever delivered babies in their practice. The results, shown in Table 6, again indicate many significant differences in the factors that influence these groups. Stepwise logistic regression of the 13 variables for the two groups resulted in five significant variables in the following order of entry: (1) level of preparation, (2) interference with office practice, (3) never interested in obstetrics, (4) the ratio of obstetricians to population, and (5) birth rate. The improvement that each entered variable contributed to the regression was statistically significant (largest $P = .014$ for birth rate), and the goodness of fit statistics indicated an adequate fit of the logistic model to the data (Hosmer $\chi^2 = 13.92$, $df = 8$, $P = .084$).

Second, these factors were compared for physicians who had once practiced obstetrics but stopped and for those who continue to practice obstetrics. Of these 13 factors, there were significant differences between these two groups for only two factors when comparison was made by paired t tests. The ratio of obstetricians to population in the state in which the physician resided was significantly higher for those physicians who stopped obstetric practice (11.32 obstetricians per 100,000 people for family physicians who stopped obstetric practice vs 10.19 obstetricians per 100,000 people for family physicians who did not stop,

$t = 2.77, P = .006$). Second, the physicians continuing to practice obstetrics were more likely to list inadequate training as an important factor (mean score 2.27 vs 1.80, $t = 2.11, P = .04$). All other factors listed in Table 6 were nonsignificant for these two groups.

Those physicians who felt well prepared to deliver babies at the start of their practice were compared with those physicians who felt relatively less well prepared. Not surprisingly, the poorly prepared physicians rated lack of interest in obstetrics (mean score 2.52 vs 1.60, $P = .001$) and inadequate obstetric training (3.32 vs 1.69, $P < .001$) as more important factors influencing their attitudes. They were also significantly more likely to rate interference with office practice (4.02 vs 3.50, $P = .008$), and difficulty in keeping up with changes in obstetrics (3.22 vs 2.68, $P = .002$), as important factors.

These factors were also compared for the five regions of the country. There were no significant differences in the ranking of factors among regions and there were no significant differences in any of the means for the various regions. Also, there were no significant differences for any of the factors when responses of the female physicians were compared with those of male physicians. A time-trend analysis revealed that the number of years in practice was not associated with any significant differences in attitudes or practice characteristics for these residency-trained physicians.

DISCUSSION

This study demonstrates the major changes in obstetric care given by residency-trained family physicians in the United States and the factors that influenced these changes. As noted in other regional studies, the most significant change is a decreasing number of family physicians who choose to offer obstetric services to their patients. Only two thirds of this sample ever delivered babies, and an actual minority (45%) continued to deliver babies at the time of the survey. These percentages are much lower than those reported for family physicians and general practitioners in the late 1970s.⁴ The current rate at which family physicians are discontinuing obstetric practice is particularly high, with this survey showing that 12% of the family physicians discontinued obstetric practice in the 12 months prior to the survey. In addition, almost one half of the physicians who continue to deliver babies are considering giving up the obstetric portion of their practice.

As fewer family physicians offer comprehensive obstetric services to their patients, there will be reduced access to prenatal and intrapartum care, particularly for women who live in rural areas or who are medically indigent. There has been much speculation regarding this reduced access to care for increasingly large segments of the population,^{3,5} and there is great potential for significant increases in maternal and neonatal morbidity and mortality.

This study concentrated on obstetric practice by resi-

TABLE 6. FACTORS INFLUENCING OBSTETRIC PRACTICE: A COMPARISON OF PHYSICIANS WHO NEVER PRACTICED OBSTETRICS WITH PHYSICIANS WHO EVER PRACTICED OBSTETRICS

Factor	Never Practiced Obstetrics (N = 115)	Ever Practiced Obstetrics (N = 140)	P
1. Level of preparation*	3.82	4.89	<.001
2. Interferes with lifestyle	4.65	4.36	NS
3. Never interested in obstetrics	2.64	1.55	<.001
4. Inadequate training	3.03	2.04	<.001
5. Interferes with office practice	4.33	3.30	<.001
6. Malpractice premiums	4.89	5.01	NS
7. Fear of lawsuit	4.47	4.28	NS
8. Low financial incentive	3.30	3.31	NS
9. Difficulty with obstetrician attitudes	3.15	2.54	<.003
10. Difficulty keeping up with advances	3.28	2.61	<.001
11. Insufficient number of deliveries	3.21	2.87	NS
12. Birth rate†	15.18	16.07	<.001
13. Density of obstetricians††	12.10	10.50	<.001

*For factors 1 through 11, the values indicated are mean scores based on a scale of 1 to 6.

†Mean state birthrate (live births per 1000 persons, 1985 estimate)

††Mean state density of obstetricians (obstetricians per 100,000 persons, 1985 estimate)

dentry-trained family physicians, a group of relatively young family physicians who have received similar post-graduate training. This group was chosen for study because it includes the bulk of family physicians who now and in coming years will provide obstetric services in this country. An understanding of factors underlying changes in obstetric practice by these physicians is needed as a critical shortage of family physicians who practice obstetrics approaches.

Certain factors were found to influence attitudes of residency-trained family physicians toward obstetric care regardless of the amount of obstetric training, the place of training or practice, or the current or past status of obstetric practice offered by the physician. The most important of these major factors influencing the attitudes of all groups of family physicians were the effect of rising malpractice insurance premiums and the fear of malpractice lawsuit. Many family physicians reported extreme opinions concerning the adverse effects of these factors, and malpractice concerns are clearly the major stimulus responsible for the declining number of family physicians who offer obstetric services.

The unpredictable nature of obstetric care, which results in interference with office practice and personal life, was

also a major factor identified with consistent frequency by all groups of family physicians.

Family physicians living in states with a relatively high ratio of obstetricians to general population were less likely to practice obstetrics. The presence of a higher density of obstetricians was an important consideration for family physicians who never offered obstetric services and for those who have given up the obstetric portion of their practice. This finding is consistent with the findings of Klein et al,¹¹ who observed that Canadian family physicians are less likely to practice obstetrics in larger communities where more obstetricians are available.

In addition to those factors that have a broad influence on all groups of family physicians, other factors were noted that significantly influence particular groups of family physicians. The family physicians who once practiced obstetrics but have now discontinued such practice and those who continue to practice obstetrics were found to have similar characteristics and attitudes. Issues of training in obstetrics and competence to practice obstetrics had little impact on the practice of either group. Indeed, the physicians who have given up obstetric practice indicated a significantly higher perceived level of preparation to practice obstetrics. This surprising finding indicates that family physicians giving up obstetrics feel very well prepared to do it, and implies that the major thrust of efforts to influence family physicians to continue their obstetric practice must focus on areas other than training and competence. Resolving malpractice and lifestyle issues are of utmost importance for these physicians.

Also of special interest are the factors that influenced family physicians' decision never to offer obstetric services. The obstetric practice choices of this increasingly large body of family physicians seem strongly influenced by malpractice concerns, lifestyle concerns, and the density of obstetricians in their area. These physicians also are influenced strongly by a number of factors that were not so important for family physicians who at some time have practiced obstetrics. The family physicians who never practiced obstetrics felt less well prepared to practice obstetrics, were more likely to indicate that they were never interested in obstetrics, were more likely to cite inadequate training and difficulty keeping up with advances in obstetrics, and were more likely to cite difficulty with obstetrician attitudes. When all of these variables were entered into the logistic regression equation described above, the differences in attitudes of these two groups were described largely by a lack of preparation and lack of initial interest to practice obstetrics. Even though the two groups differed significantly in their initial interest to practice obstetrics, it should be noted that both groups rated lack of interest in obstetrics as the least important factor influencing their decision to discontinue obstetrics (Table 6). In addition to the resolution of malpractice and lifestyle issues, promotion and improvement of obstetric training for family physicians will be of importance if the proportion of family physicians who initially practice obstetrics is to increase.

It has been suggested that obstetricians' attitude toward

the practice of obstetrics by family physicians may be a significant deterrent to such practice. The attitudes of obstetricians toward family physicians could certainly have a significant influence on family physicians' decision to practice obstetrics, though the findings of this study suggest that this factor is of relatively minor importance.

Certain biases in this study deserve comment. One third of the physicians in the sample did not respond, and there are no data on the characteristics of these physicians. Thus, a significant response bias is possible. Because this study surveyed a relatively homogeneous group (residency-trained family physicians), and this group is likely to have a high interest in the topic, significant response bias is unlikely.

In summary, family physicians in the United States are withdrawing from maternity care. A lower proportion are choosing to include obstetrics at the inception of their careers, and many who initially practice obstetrics are discontinuing such practice. The major factors responsible for this withdrawal are malpractice and liability issues, the adverse effects of obstetric practice on lifestyle and office practice, and the increasing number of obstetricians. Issues of training and competence in obstetrics are less important, particularly for family physicians who discontinue obstetric practice after having done it initially. There is growing evidence that the adequacy of prenatal care for women in rural and medically underserved areas is deteriorating. Measures must be taken before the shortage of family physicians who provide maternity care becomes critical.

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