

JRMC | Journal of Regional Medical Campuses

Outcomes of a Rural-Focused Family Practice Residency: Exploring Influences Impacting Obstetric Practices

Sandra Stover, MD, FAAFP; Julia Lasswell; Samantha C. Friedrichsen, MPH; Rebecca L. Emery Tavernier, PhD, LP, PMH-C

DOI: <https://doi.org/10.24926/jrnc.v5i1.4338>

Journal of Regional Medical Campuses, Vol. 5, Issue 1 (2022)

z.umn.edu/JRMC

All work in JRMC is licensed under CC BY-NC



Outcomes of a Rural-Focused Family Practice Residency: Exploring Influences Impacting Obstetric Practices

Sandra Stover, MD, FAAFP; Julia Lasswell; Samantha C. Friedrichsen, MPH; Rebecca L. Emery Tavernier, PhD, LP, PMH-C

Abstract

Purpose: Family medicine physicians play a crucial role in maternity care in community-based settings. However, residency graduates are decreasingly likely to provide delivery services. We explored residency training and graduates' inclusion of obstetrical care in practice by surveying graduates of the Duluth Family Medicine Residency, which traditionally produces a high number of graduates serving rural communities and providing obstetrical care.

Methods: Graduates (N = 48) were surveyed about their maternity care provision and perceptions of preparedness for such services during residency. Additional factors impacting decisions to provide obstetric care (eg, postresidency training, community size, and presence of obstetricians providing delivery services in their community) were evaluated using chi-square or Fisher's exact tests.

Findings: Of the 46% of graduates providing maternity services, most provided perinatal clinical care (68% provided delivery care and 4% provided operative deliveries). Seventy-one percent worked in a community with an available obstetrician. Graduates providing obstetric services were more likely to live in rural communities (66% vs 35%, $P < .01$). Thirty percent of graduates received extra obstetrical training in residency. Those providing obstetric services were more likely to cite that their decision to practice obstetrics was influenced by the number of deliveries performed, interactions with attending obstetricians, and interactions with prenatal and laboring patients during residency compared to those not providing obstetric services ($P < .05$).

Conclusions: Residency training has an impact on the provision of maternity care and potential practice of family physicians in rural communities. Attention to curricular support, particularly exposure to maternity patients, is important for resident comfort in obstetrics.

INTRODUCTION

Availability of community-based obstetrical care for rural families has declined in the United States over the past 2 decades.¹ Hospitals with birth volumes fewer than 240 per year are more likely to have family physicians and general surgeons attend deliveries, while higher-volume centers are more likely to have obstetricians and midwives in attendance.² Family medicine physicians play an important role in rural areas, as they provide the majority of the maternity care.³ However, despite some positive benefits in reduction of career burnout,⁴ there is a smaller percentage of family medicine residency graduates

adding obstetrical delivery care to their practices than there was in 2000.¹

Family physicians face challenges in providing maternity care, including variation in available obstetrical training during residency, credentialing problems postgraduation, and perceived "turf battles" over which type of provider has the best skill set to administer maternity care.⁴⁻⁶ Recent studies show that residency graduates with interest in obstetrical care have difficulty finding positions that allow them to use their delivery skills.⁷ Sustainability of a rural practice, including obstetrics, can also be challenging for fellowship-trained providers.^{8,9} A scarcity of trained providers within a community has the

Sandra Stover, MD, FAAFP, Assistant Professor, Department of Family Medicine and Biobehavioral Health, University of Minnesota Medical School, Duluth Campus, Duluth, Minnesota

Julia Lasswell, Medical Student, University of Minnesota Medical School, Minneapolis, Minnesota

Samantha C. Friedrichsen, MPH, Senior Healthcare Analyst, Blue Cross and Blue Shield of Minnesota, Eagan, Minnesota

Rebecca L. Emery Tavernier, PhD, LP, PMH-C, Licensed Psychologist, Essentia Health, Duluth, Minnesota

Corresponding author: Sandra Stover, MD, FAAFP DMed Family Medicine & Biobehavioral Health 155 Smed 1035 University Drive Duluth, MN 55812-3031 218-370-1100 Stove007@d.umn.edu



potential to impact optimum maternity care for rural communities, as increased distance to access delivery care can increase maternal anxiety¹⁰ and separating perinatal care from delivery care may interrupt continuity relationships between provider and patient. As such, understanding optimal training and experiential skill development by family physicians, ensuring the provision of best practice in obstetrical care, and addressing provider sustainability are all important aspects to building an effective delivery team within health care systems.

The variability between family medicine residency training programs has not gone unnoticed.⁴ In 2014, the Accreditation Council for Graduate Medical Education (ACGME) updated training expectations for family medicine residencies to include competency-based requirements rather than volume-based ones; unfortunately, the definition of obstetrical competencies in this redirection was not well defined. Residencies have responded variably in their program parameters and in skills assessments regarding obstetric competencies following this change.¹¹ Less than a decade has passed since the ACGME changes went into effect, and the repercussions to those changes should soon begin to be noticeable. There are opportunities for comparing and tracking graduate outcomes and how they impact objectives in providing needed obstetrical care, particularly in rural areas, though there have been limited efforts to do so.

This study aimed to understand characteristics of family medicine physicians who currently practice obstetrical care, with a focus on aspects of their residency training that may have influenced their decision to provide such care. These aims were explored in a sample of graduates who trained at the Duluth Family Medicine Residency Program. This rural-focused residency has been in operation since 1975, and its graduates primarily serve communities with populations under 25,000. Residency graduates were surveyed to determine whether they currently practice maternity care in their communities. Perceptions of how well the residency prepared them to provide such services were assessed. Additional factors that impacted decisions to provide obstetric care—such as postresidency training options in obstetric fellowships, community size, and if there were obstetricians providing delivery services in their community—were also evaluated.

METHODS

Participants and Procedures

Data for this study were collected between August and October 2020. Graduates of the Duluth Family Medicine Residency Program who had contact information available were invited by email to complete a REDCap survey assessing their experiences delivering obstetric services.¹² This study was determined to be exempt by the University of Minnesota Institutional Review Board.

Measures

The electronic survey included a researcher-developed questionnaire assessing participant demographics (eg, gender, ZIP code of current medical practice, population of the town where current medical practice is located), residency information (eg, year of residency graduation, feedback on training experiences during residency), current obstetric practices (eg, obstetric practices available in community, types of obstetric practices provided by participant), residency experiences that influenced participants' decisions to practice obstetrics (eg, interactions with prenatal and laboring patients, number of deliveries performed), and residency program feedback. All questions were multiple choice or short text write-in, apart from one residency feedback question. For this question, participants were asked to provide a write-in response describing what they think would be most beneficial to include in a family medicine residency program to promote obstetrical training.

Statistical Analysis

Analyses were conducted using SAS 9.4 (SAS Institute Inc., Cary, NC). Descriptive statistics were initially calculated for all survey items. ZIP codes of the participants' medical practice locations were classified as rural or urban according to the Federal Office of Rural Health Policy's rural areas listing (<https://www.hrsa.gov/rural-health/about-us/definition/datafiles.html>), and these locations were mapped. This method of using ZIP codes to designate rural-urban status is based off rural-urban commuting area (RUCA) codes. Chi-square tests were conducted to explore whether the likelihood of practicing obstetrics varied by (1) participation in the obstetrics fellowship,

(2) participant gender, (3) availability of a local obstetric practice, (4) rural or urban medical practice location, and (5) year of residency graduation. The prevalence of residency experiences noted as contributing to participants' decisions to practice obstetrics was also compared between graduates practicing versus not practicing obstetrics using chi-square tests. Fisher's exact tests were used when cell sizes were too small for chi-square tests. P values $< .05$ were considered statistically significant. In addition to statistical significance, clinical significance was also considered in the interpretation of results. Given the limited sample size, write-in responses were not formally qualitatively analyzed. Instead, key quotes from these write-in responses were organized according to similarity and used to inform the quantitative results.

RESULTS

Sample Characteristics

Of the 130 survey invitations sent, 45 participants completed the entire survey and 3 participants partially completed the survey, resulting in an analytic sample of 48. As shown in Table 1, just more than half of survey respondents identified as female (52%, $n = 24/46$). Years of residency graduation ranged from 1975 to 2020, with nearly half of respondents having completed residency after 2010 (46%, $n = 22$).

Respondents were currently located at practices in towns that varied in population size from 300 to 300,000 people. Most practices were located in a rural ZIP code (63%, $n = 29$). Just less than half of the respondents had changed clinical sites since their first postresidency site (46%, $n = 22$), and the median number of hospital beds at the current practice was 25, ranging from 0 to 500 (data not shown). Practice locations are displayed in Figure 1.

Table 2 provides details on the types of obstetric services provided at the respondents' practice locations. As shown, most respondents were practicing in a community with an obstetrician (71%, $n = 34$), with at least 1 physician practicing obstetric care (85%, $n = 39$). There were only 4 respondents (9%) who reported at least 1 general surgeon providing C-sections in the community. The number of deliveries per year at the practice varied widely from 0 to 2,000, with more than one-quarter of

respondents reporting that the delivery trend is decreasing (27%, $n = 13$).

As shown in Table 3, nearly half of respondents ($n = 22$, 46%) were currently providing obstetric services, the majority of whom reported providing prenatal ($n = 20$, 91%) or postpartum ($n = 19$, 86%) care, while fewer are conducting vaginal ($n = 15$, 68%) or operational ($n = 9$, 41%) deliveries. Nearly 30% of respondents obtained additional obstetrics training during residency ($n = 14$), though only 4% went on to complete an obstetrics fellowship ($n = 2$). For respondents who stopped providing obstetric services, there were a variety of reasons reported, but the majority indicated that they stopped due to personal choice for career change (42%, $n = 11$).

Examining Key Characteristics by Whether or Not Residency Graduates Are Currently Providing Obstetric Services

As shown in Table 1, residency graduates located in rural areas were more likely to be providing obstetric services than those practicing in urban areas (66% vs 12%, $p < .001$). Relatedly, of the 13 graduates practicing in a town with a population of more than 30,000, none were practicing obstetrics. Generally, graduates who received obstetric-specific training were more likely to be practicing obstetrics. Graduate gender, year of graduation, or whether there was an obstetrician in the community were not associated with practicing obstetrics.

Experiences Specific to Residency That Influenced Decision to Practice Obstetrics

As shown in Table 4, those providing obstetric services were more likely than those not currently doing so to report that their decision to practice obstetrics was influenced by the number of deliveries performed during residency, their interactions with attending obstetricians during residency, and interactions with prenatal and laboring patients during residency. For example, 96% ($n = 21$) of graduates currently practicing obstetrics said the number of deliveries performed impacted whether they decided to practice obstetrics, compared to only 68% ($n = 17$) of graduates not currently practicing obstetrics ($p = .025$).

Table 5 summarizes residency program feedback provided by graduates. Almost all residency

graduates (92%, n = 43) reported feeling prepared or very prepared to provide obstetric services after residency, though only 68% (n = 32) felt prepared or very prepared to provide high-risk obstetric services. Just more than one-third (38%, n = 18) of graduates wished that their residency program had provided more continuity with patients, 28% (n = 13) wished they had had more exposure to family physicians delivering babies, 17% (n = 8) wished there had been more faculty presence on labor and delivery, and 26% (n = 12) wished there had been more lectures and didactics on prenatal issues. As shown from the key quotes in Table 6, respondents further described a desire for additional residency training (1) in surgical and emergent deliveries and postdelivery care, (2) on best practices for family practice physicians to provide obstetric care, and (3) through online modules and exposure to alternative health care practices.

DISCUSSION

Nearly half (46%) of the Duluth Family Medicine Residency Program graduates assessed in the present study practiced obstetric care, which is a substantially higher percentage than the national average of 7%.¹³ Graduates practiced in a wide variety of community types across Minnesota and Wisconsin but practiced at distant sites as well. Overall, most graduates (90%) were doing some form of pre- or postpartum maternity care, with lesser numbers doing vaginal deliveries and the smallest number doing operative deliveries. Similar to other reports,^{2,14} respondents in urban communities were less likely to be doing delivery care, and no respondents in towns with populations greater than 30,000 were doing delivery care.

Overall, providers reported satisfaction with the training provided at the Duluth Family Medicine Residency Program. Ninety-one percent of respondents felt prepared or very prepared to provide obstetric services postresidency. Most respondents (60%-80%) reported wishing for the same amount of key obstetric training components in their residency program, while the other 20%-40% wanted more didactic and hands-on skill training, faculty support, exposure to family physicians doing deliveries, and continuity of care with patients. The write-in responses were particularly representative of additional areas respondents would like to see

included in training. For example, further instruction in higher-risk situations such as neonatal resuscitation and maternal emergencies was included in the comments as a desired area for training, as well as additional guidance on best practices for family practice physicians to provide obstetric care. Given that family physicians frequently cite a limited scope of obstetrical training in residency as a barrier to providing obstetric services later in their careers,⁴⁻⁶ these findings support the need to incorporate additional training in and opportunities to provide obstetric care in family medicine residency programs to promote comfort in providing obstetric care. Only one-third of physicians providing delivery care had accessed additional training postgraduation, though fellowships were not common. For career discernment, the number of deliveries attended, the interaction with attending physicians, and direct patient care during residency were most important to the graduates in deciding whether to practice obstetrics. A high percentage of respondents also noted having an obstetrician available in their community, which implies existing community relationships between maternity care providers. The intersectionality between family medicine and obstetrical providers in rural and urban communities is an important factor to consider given that training, proof of competency, and interprofessional relationships are key in successful maternity care programs⁶ and allow for an opportunity to educate diverse professionals on the role of family medicine physicians in providing obstetric care. It is important to note that reasons for discontinuation of delivery care varied and reflected both individual choices and community attributes. The most common reason identified for discontinuing with delivery care was a personal choice for a career change. Additional responses in the write-in comments included aspects of institutional change as well as individuals' readiness for retirement.

Limitations to the study include a spread of responses across a broad range of graduation years, which did not provide large enough numbers to compare outcomes over time. In addition, we did not have valid contact information for all graduates and had a low response rate (37%), which resulted in a relatively small sample size. Although the write-in responses obtained in this study are valuable, numbers were too small for a formal qualitative analysis. Finally, results

are from a relatively small number of graduates from a single residency program, which limits generalizability of the findings. It will be important for future studies to identify specific opportunities to adjust the residency curriculum using a more robust representation of respondents. Having a better sense of incoming graduates' intentions to practice obstetrics and how that changes during their time in residency would also be helpful in directing curricular improvements.

The overall findings of our study reflect the importance of residency training experiences in influencing family medicine physicians' decisions to provide obstetric care. These findings highlight the utility of including a range of didactic and hands-on training in obstetric care and support the need to incorporate exposure to working with perinatal patients and offer additional education on the role of family physicians in providing obstetric care within their communities during residency training. The idea of strategic planning for cross-specialty obstetric care is intriguing, and further studies examining existing community-centered integration for obstetric care programming would be valuable. Interdisciplinary training for obstetric care providers could begin in residency, continue during fellowships, and be an important part of team-based continuing education opportunities in the community setting, which could be extrapolated to include a strategy for regional approaches to support maternity care in resource-poor areas.

Table 1. Participant Demographics and Key Characteristics Between Residency Graduates Who Do and Do Not Currently Provide Obstetric Services (N = 48)

	Overall (N = 48) n (%)	Not currently providing obstetric services (n = 26) n (%)	Currently providing obstetric services (n = 22) n (%)	p value
Gender (missing n = 2)				.546
Female	24 (52.2)	11 (45.8)	13 (54.2)	
Male	22 (47.8)	13 (59.1)	9 (40.9)	
Year of residency graduation				.513
1975-1999	12 (25.0)	7 (58.3)	5 (41.7)	
2000-2009	14 (29.2)	9 (64.3)	5 (35.7)	
2010-2020	22 (45.8)	10 (45.5)	12 (54.6)	
Population of town where practice is located				< .001 [†]
≤3,000	13 (27.1)	8 (61.5)	5 (38.5)	
3,001-8,999	10 (20.8)	1 (10.0)	9 (90.0)	
9,000-30,000	12 (25.0)	4 (33.3)	8 (66.7)	
30,000	13 (27.1)	13 (100.0)	0 (0.0)	
Community type (missing n = 2)				< .001 [†]
Rural	29 (63.0)	10 (34.5)	19 (65.5)	
Urban	17 (37.0)	15 (88.2)	2 (11.8)	
Is there an obstetrician in the community?				.559
Yes	34 (70.8)	17 (50.0)	17 (50.0)	
No	14 (29.2)	9 (64.3)	5 (35.7)	
Obstetrics training: Select all that apply.				
Extra obstetrics training during residency	14 (29.2)	4 (28.6)	10 (71.4)	.049
Postresidency fellowship in obstetrics	2 (4.2)	0 (0.0)	2 (100.0)	.205 [†]
Post-training mentoring in community	4 (8.3)	0 (0.0)	4 (100.0)	.038 [†]
Trained in C-sections	8 (16.7)	1 (12.5)	7 (87.5)	.017 [†]
None	34 (70.8)	22 (64.7)	12 (35.3)	.049

[†]Fisher's exact test used due to small cell size(s).

Table 2. Details on Obstetric Services Provided at Practice (N = 48)

Variable	n (%)
Number of physicians providing obstetric care in community (missing n = 2)	
0	7 (15.2)
1-10	27 (58.7)
≥11	12 (26.1)
Is there an obstetrician in the community?	
Yes	34 (70.8)
No	14 (29.2)
If yes, number of obstetricians in community (n = 32, missing n = 2)	
1	10 (31.3)
2-10	12 (37.5)
>10	10 (31.3)
Do you share obstetric calls with an obstetrician? (missing n = 1)	
Yes	9 (19.2)
No	38 (80.9)
If yes, is the obstetrician in the system? (n = 9)	
Yes	9 (100.0)
No	0 (0.0)
Does a general surgeon provide C-sections in the community? (missing n = 2)	
Yes	4 (8.7)
No	42 (91.3)
If yes, number of general surgeons performing C-sections (n = 4)	
0	1 (25.0)
1	1 (25.0)
2	1 (25.0)
3	1 (25.0)
Number of deliveries per year at practice location (missing n = 1)	
0	19 (40.4)
1-50	9 (19.2)
51-150	7 (14.9)
151-350	7 (14.9)
500-2,000	5 (10.6)
Changes in delivery trend	
Increasing	6 (12.5)
Decreasing	13 (27.1)
Staying the same	29 (60.4)

Table 3. Graduates' Experiences With Obstetrics (N = 48)

Variable	n (%) or mean (SD)
Obstetrics training: Select all that apply.	
Extra obstetrics training during residency	14 (29.2%)
Postresidency fellowship in obstetrics	2 (4.2%)
Post-training mentoring in community	4 (8.3%)
Trained in C-sections	8 (16.7%)
None	34 (70.8%)
Currently providing any obstetric services	
Yes	22 (45.8%)
No	26 (54.2%)
If yes, types of services currently providing, select all that apply. (n = 22)	
Prenatal	20 (90.9%)
Postpartum	19 (86.4%)
Vaginal delivery	15 (68.2%)
Operational delivery	9 (40.9%)
If yes, number of deliveries completed per year (n = 22, missing n = 1)	14.7 (15.3)
If no, number of years providing obstetric services previously (n = 26, missing n = 2)	9.8 (12.2)
0	6 (25.0%)
1-5	8 (33.3%)
6-20	4 (16.7%)
≥21	6 (25.0%)
If no, reason for stopping obstetric services. Select all that apply. (n = 26)	
Hospital stopped doing active obstetric services	1 (3.9%)
Reduced number of deliveries in community	2 (7.7%)
Personal choice for career change	11 (42.3%)
Personal choice not related to a career change	6 (23.1%)
Other reason	7 (26.9%)

Table 4. Residency-Specific Experiences That Helped Discern Whether to Practice Obstetrics Among Graduates Currently Practicing Obstetrics Versus Those Who Are Not (N = 47)

	Overall (n = 47)	Not currently providing obstetric services (n = 25)	Currently providing obstetric services (n = 22)	p value
	n (%)	n (%)	n (%)	
Number of deliveries performed	38 (80.9)	17 (68.0)	21 (95.5)	.025*
Interactions with prenatal and laboring patients	29 (59.6)	10 (40.0)	18 (81.8)	.007*
Interactions with community family physicians on labor and delivery	22 (46.8)	8 (32.0)	14 (63.6)	.061
Interactions with faculty during deliveries	15 (31.9)	5 (20.0)	10 (45.5)	.120
Interactions with attending obstetricians	30 (63.8)	12 (48.0)	18 (81.8)	.032*
Decided not to practice obstetrics after residency experience	5 (10.6)	4 (16.0)	1 (4.6)	.353*
Never intended to practice obstetrics	1 (2.1)	1 (4.0)	0 (0.0)	1.000
Other influences	9 (19.2)	3 (12.0)	6 (27.3)	.270*

Missing n = 1 for all questions. *Fisher's exact test used due to small cell size(s).

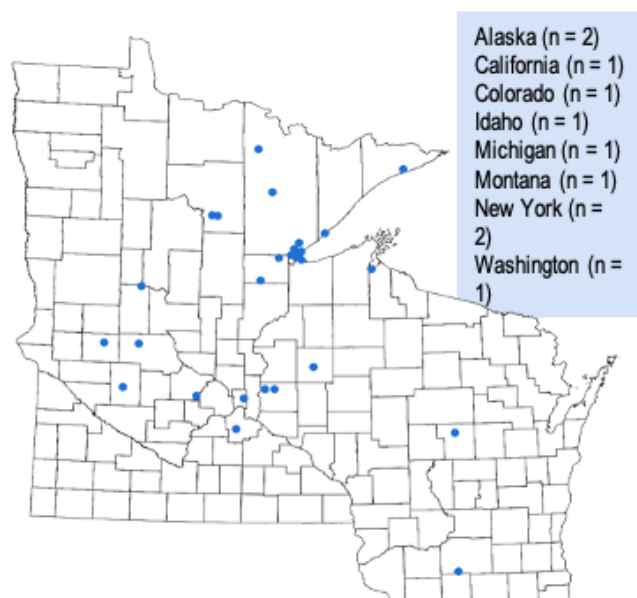
Table 5. Residency Program Feedback, Overall and by Graduation Year (N = 47)

Variable	n (%)
How prepared did you feel providing obstetric services in your community postresidency/post-fellowship training?	
Very unprepared	4 (8.5)
Unprepared	0 (0.0)
Neither prepared or unprepared	0 (0.0)
Prepared	18 (38.3)
Very prepared	25 (53.2)
What do you wish would have been different about your continuity with patients during residency?	
A lot less/Less	0 (0.0)
The same amount	29 (61.7)
More	15 (31.9)
A lot more	3 (6.4)
What do you wish would have been different about your exposure to family physicians delivering babies during residency?	
A lot less/Less	0 (0.0)
The same amount	34 (72.3)
More	9 (19.2)
A lot more	4 (8.5)
What do you wish would have been different about faculty presence on labor and delivery during residency?	
A lot less/Less	1 (2.1)
The same amount	38 (80.9)
More	6 (12.8)
A lot more	2 (4.3)
What do you wish would have been different about lectures/didactics on prenatal issues during residency?	
A lot less/Less	0 (0.0)
The same amount	35 (74.5)
More	11 (23.4)
A lot more	1 (2.1)
How prepared do you feel providing high-risk OB services?	
Very unprepared	1 (2.1)
Unprepared	5 (10.6)
Neither prepared or unprepared	9 (19.2)
Prepared	17 (36.2)
Very prepared	15 (31.9)
Missing n = 1 for all questions	

Table 6. Key Quotes From Graduates Describing Important and Desired Residency Training Experiences for Obstetrics and Maternal Care

Felt prepared to practice obstetrics and maternal care following residency training	Nothing, I felt very prepared. Residency well prepared me for OB in practice. Residency OB was great . . . was very prepared and ready . . . I was fortunate to train during a time when we were given responsibility and exposure to manage OB patients . . . my training was superb and highly doubt that current residents receive the exposure, the independence, and volume we did. On the question [about] whether I feel prepared for high-risk OB, I felt more prepared coming out of residency, but feel unprepared now with the number of deliveries that I actually do. It is not the supportive material, it is doing a lot of [deliveries] because we were in-house every other night the first year . . . there were no obstetric residents and we had great OB attendings. Having said that, it was really good to get NRP training in residency (then I became an instructor for 30 years), and I like the ALSO course.
Desire for additional training in surgical and emergent deliveries and postdelivery care	I feel the training was adequate, but if I was going to go back and re-train, I would probably do surgical OB (C-section) in order to get more deliveries. More simulated emergencies for practice. (I think I only had maybe 2-3 real-life shoulder dystocias, for example) More lactation consultation information. In my opinion, there should have been more exposure to interpregnancy care issues and neonatal resuscitations.
Desire for additional training on best practices for family practice physicians to provide obstetric care	Discussions regarding sharing a practice between FP-OBs and OB/GYNs, in particular ideas about when to refer to OB/GYNs and what is an appropriate scope for an FP-OB. I had very little training from family practice physicians with OB.
Desire for additional training through online modules and exposure to alternative health care practices	No guidance on what to look for in a practice if you want to do OB. I left my first practice because we closed L&D . . . also, very little support for the organization when discussing things the local hospital needed to maintain those services. I'm not sure if online learning modules were available when I trained, certainly that would be beneficial at that point as well as now . . . International rotation to be exposed to alternative health care systems' way of delivering OB services A robust D&C training program

ALSO = advanced life support in obstetrics; D&C = dilation and curettage; ER = emergency room; FP-OB = family physician with obstetrics; L&D = labor and delivery; NRP = neonatal resuscitation program; OB = obstetrics; OB/GYN = obstetrician/gynecologist

Figure 1. Survey Respondents' Practice Locations

References

- Hung P, Kozhimannil KB, Casey MM, Moscovice IS. Why are obstetric units in rural hospitals closing their doors? *Health Serv Res.* 2016;51(4):1546-1560.
- Kozhimannil KB, Casey MM, Hung P, Han X, Prasad S, Moscovice IS. The rural obstetric workforce in US hospitals: Challenges and opportunities. *J Rural Health.* 2015;31(4):365-372.
- Young RA. Maternity care services provided by family physicians in Rural Hospitals. *J Am Board Fam Med.* 2017;30(1):71-77.
- Eden AR, Barreto T, Hansen ER. Experiences of new family physicians finding jobs with obstetrical care in the USA. *Fam Med Community Health.* 2019;7(3):e000063.
- Magee SR, Radlinski H, Nothnagle M. Maternal-child health fellowship: maintaining the rigor of family medicine obstetrics. *Fam Med.* 2015;47(1):48-50.
- Eden AR, Peterson LE. Challenges faced by family physicians providing advanced maternity care. *Matern Child Health J.* 2018;22(6):932-940.
- Barreto TW, Eden A, Brock A. The impact of practicing obstetrics on burnout among early-career family physicians. *Fam Med.* 2020;52(6):408-413.
- Rodney WM, Martinez C, Collins M, Laurence G, Pean C, Stallings J. OB fellowship outcomes 1992-2010: where do they go, who stops delivering, and why? *Fam Med.* 2010;42(10):712-716.
- Chang Pecci C, Leeman L, Wilkinson J. Family medicine obstetrics fellowship graduates: training and post-fellowship experience. *Fam Med.* 2008;40(5):326-332.
- Pearson J, Siebert K, Carlson S, Ratner N. Patient perspectives on loss of local obstetrical services in rural northern Minnesota. *Birth.* 2018;45(3):286-294.
- Fashner J, Cavanagh C, Eden A. comparison of maternity care training in family medicine residencies 2013 and 2019: a CERA program directors study. *Fam Med.* 2021;53(5):331-337.
- Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—A metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform.* 2009;42(2):377-381.
- Worth A. The numbers quandary in family medicine obstetrics. *J Am Board Fam Med* 2018;31(1):167-168.
- Avery D, Graettinger KR, Waits S, Parton JM. Comparison of delivery procedure rates among obstetrician-gynecologists and family physicians practicing obstetrics. *Am J Clin Med.* 2014;10(1):16-20.