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Understanding and Overcoming Barriers to Rural Obstetric Training for Family Physicians

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ABSTRACT

Background and Objectives: Family physicians are the most common health professional providing rural obstetric (OB) care, but the number of family physicians practicing OB is declining. To address rural/urban disparities in parental and child health, family medicine must provide robust OB training to prepare family physicians to care for parent-newborn dyads in rural communities. This mixed-methods study aimed to inform policy and practice solutions.

Methods: We surveyed 115 rural family medicine residency programs (program directors, coordinators, or faculty) and conducted semistructured interviews with personnel from 10 rural family medicine residencies. We calculated descriptive statistics and frequencies for survey responses. Two authors conducted a directed content analysis of qualitative survey and interview responses.

Results: The survey yielded 59 responses (51.3%); responders and nonresponders were not significantly different by geography or program type. Most programs (85.5%) trained residents to provide comprehensive prenatal and postpartum care. Continuity clinic sites were predominantly rural across all years and OB training was largely rural in postgraduate year 2 (PGY2) and PGY3. Almost half of programs listed "competition with other OB providers" (49.1%) and "shortage of family medicine faculty providing OB care" (47.3%) as major challenges. Individual programs tended to report either few challenges or multiple challenges. In qualitative responses, common themes included the importance of faculty interest and skill, community and hospital support, volume, and relationships.

Conclusions: To improve rural OB training, our findings support prioritizing relationships between family medicine and other OB clinicians, sustaining family medicine OB faculty, and developing creative solutions to interrupt cascading and interrelated challenges.

INTRODUCTION

Rural communities rely primarily on family physicians to provide comprehensive primary care, including obstetrics (OB). Family physicians are the most common health professional providing rural OB care, but the number of family physicians practicing OB is declining.[1–4] The United States is also experiencing a national shortage of obstetricians and gynecologists (Ob-Gyns), more acutely in rural areas.[1,4] In 2019, more than half of rural counties had no family physicians who delivered babies, and nearly one-third had no clinicians practicing OB.[4]

Parental and child health disparities exist between rural and urban populations.[5] Access to prenatal care and delivery services is strongly related to better maternal and infant outcomes.[6,7] If family physicians are not equipped to care for pregnant patients in rural communities, these patients receive inadequate OB care and ultimately face higher perinatal morbidity and mortality.[8–10] The family medicine workforce is important to increase rural access to OB care.[3] More family physicians in a county is protective for retention of local hospital-provided OB services.[11]

Despite the critical role of family physicians in OB care, the specialty of family medicine is experiencing an OB crisis. The proportion of family physicians providing maternity care declined from 23.3% in 2000 to 9.7% in 2010, and in 2016, only 7% of family physicians reported performing deliveries.[12,13] Many family physicians report a desire to practice OB when entering residency, but most (86% from the Family Medicine National Graduate Survey in 2020) do not provide OB care after

training.[14–16] Family physicians practicing in rural settings are twice as likely to provide OB care compared to those in urban areas.[17] The long-term decline in rural OB care is due in part to the lack of rural OB training opportunities to prepare residents and recruit them to rural practice as well as challenges maintaining skills in lower-volume settings.[18–20]

The availability, characteristics, barriers, and facilitators to OB training in rural family medicine residency programs have not been previously investigated in depth. This national mixed-methods study sought to describe the training landscape and inform sustainable initiatives for rural family medicine OB training.

METHODS

We surveyed rural family medicine residency programs (criteria described below) and conducted interviews with program personnel.

Survey

Our sample consisted of a list of 115 accredited rural family medicine residencies as identified by the RTT Collaborative in April 2021.[21,22] Rural programs provide more than 50% of their training in a rural location according to at least two federal definitions of rural, including integrated rural training tracks (RTTs) and non-RTT rural programs.[23] RTTs are separately accredited, rurally-located programs integrated with a larger urban residency to provide an explicit track or pathway that is rurally focused.[23] Non-RTT rural programs include programs that are either (1) rurally located or (2) are urban programs with rural tracks where a designated subset of residents spend more than 50% of time training in rural locations but are not separately accredited.

To inform survey development, we interviewed three key informants from rural family medicine residency programs of differing size and geography. We modeled a 61-question residency survey instrument after similar surveys of rural residency programs that were developed with the input of experts in rural graduate medical education.[24–26]

The survey queried basic program information, OB training locations, and OB competencies. Training location information included zip codes for each program year of the rural continuity clinic, the hospital for the majority of OB rotations, and any required rural OB rotations. The questionnaire also asked the extent to which programs experienced challenges (major, minor, not a challenge, or not applicable) in providing robust OB training.

We collected and managed survey data using REDCap electronic data capture tools hosted at the University of Washington. We made up to nine attempts from August through November 2021 by email or telephone to contact residency programs meeting inclusion criteria. Contacts included program directors, program coordinators, associate program directors, and rural site faculty and staff. We asked for the most relevant individual within the program to submit responses.

We used version 3.1 of the zip code approximation of the 2010 Rural-Urban Commuting Area (RUCA) codes to classify training locations as urban,* large rural,** small rural,*** or isolated small rural.**** We calculated descriptive statistics for survey responses, used χ^2 tests to compare survey respondents and non-respondents by census region and program type (RTT vs non-RTT program), and calculated frequencies of the reported challenges to providing robust OB training. We used SAS 9.4 software for Windows for analysis. We report significant findings at $P<.05$.

Interviews

We invited geographically diverse survey respondents from 18 rural family medicine residency programs to participate in interviews. We contacted program contacts up to three times, yielding interviews from ten programs from June to November, 2021.

The semistructured interview guide (see online supplement) included questions about general program information, the model of OB training, and factors that influence the ability to provide OB training. Two or three study team members conducted audiorecorded interviews via Zoom video teleconferencing software for 45-60 minutes, recording responses by hand.

Qualitative Analysis

We identified themes within two sources of qualitative data: responses to an open-ended survey question and semistructured interviews. Two authors (E.F., D.E.) conducted a directed content analysis[27] to identify main themes regarding barriers, facilitators, and solutions. We coded responses using predetermined categories parallel to survey topics, as well as any additional considerations offered by survey respondents or interviewees. Through an iterative process the two authors resolved coding discrepancies to achieve 100% agreement.

The University of Washington Human Subjects Division approved this study as exempt human subjects research.

RESULTS

Of 115 programs contacted, 59 responded for a 51.3% response rate. Responding programs did not differ from nonrespondents by census region or program type (RTT vs non-RTT). All responding programs were 36 months in length aside from one 48-month program. Table 1 presents general and OB-related program characteristics. The median number of core faculty members was four, with two of those practicing OB. Most programs (63.8%) affirmed training rural family medicine OB practitioners as part of their program mission.

The zip codes of continuity clinic sites were predominantly in rural locations (Table 2). Most OB training locations were in large rural areas. In PGY1, 40.0% of hospital OB training was in urban locations, diminishing to less than 20% in PGY2 and PGY3. Required rural OB rotations were most common in large rural areas (61.9%-70.6%) and about one-quarter occurred in small rural areas.

In terms of OB competencies (results not tabled), most programs (85.5%) reported training residents to provide comprehensive prenatal and postpartum care including vaginal

TABLE 1. Characteristics of Rural Family Medicine Residency Programs

Program Type, % (n) [1]	
Community based, nonaffiliated	36.2% (21)
Community based, medical school affiliated	51.7% (30)
Community based, medical school administered	5.2% (3)
Medical school based	5.2% (3)
Other	1.7% (1)
Rural Program Type, % (n)	
RTT	50.8% (30)
Non-RTT	49.2% (29)
Census Region, % (n)	
Northeast	6.8% (4)
Midwest	25.4% (15)
South	33.9% (20)
West	33.9% (20)
Obstetric Training Sites, % (n) [1]	
Federally Qualified Health Center	33.9% (20)
Critical Access Hospital	27.1% (16)
Rural Health Clinic	23.7% (14)
Indian Health Service	6.8% (4)
Title X	5.1% (3)
None of the above	1.7% (1)
Core Faculty, Median (Range)	4 (1-15)[2]
Faculty practicing OB, mean (range)	2 (0-11)[2]
Training rural family medicine OB physicians as part of program mission, % (n)[1]	
Yes	63.8% (37)
No	36.2% (21)

Abbreviations: OB, obstetrics; RTT, rural training track.
[1] One response was missing for these survey questions.
[2] One program listed 60 core faculty with 20 practicing OB. We were unable to confirm this, so the data are removed as an outlier.

deliveries. Less than one-third (29.1%) of programs provided training to enable residents to perform operative deliveries including cesarean section. Over half (56.4%) trained residents in OB ultrasound. Surgical gynecologic procedures were taught by 21.8% and general surgical skills by 29.1% of programs. Programs required a median total of 16 weeks of OB time across all years of residency training, and 85.7% offered additional optional OB training.

Programs reported whether a list of challenges were major, minor, or not a challenge to providing robust OB training (Table 3). Almost half of programs listed competition with other OB providers (49.1%) and shortage of family medicine faculty providing OB care (47.3%) as major challenges. One program noted all but one factor as a challenge, and one program listed just two factors as challenges. Clusters of major challenges were most common in community factors (competition with other OB clinicians, patient outmigration to urban facilities, declining OB patient population, and lack of community awareness of family physician scope of practice; n=23, 45.1%, reporting all of these) and personnel factors (shortage of family medicine faculty providing OB care; shortage of interested, willing faculty; lack of resident interest in OB; nursing discomfort with resident involvement; and lack of OB-trained outpatient clinic staff; n=13, 28.3%, reporting all of these).

Content analysis of qualitative survey responses revealed themes including institutional culture and support, relationships between the residency program and other OB partners, patient volume, and presence of family medicine OB faculty (Table 4). Programs described supportive institutions, organizational culture, history, and reputation as factors contributing to their success in robust OB training, and those who perceived lack of support or respect noted this as a barrier. Many programs credited their robust training to specific sources of OB volume early in training for learners to create a strong foundation of knowledge and experience, and others mentioned lack of volume as a barrier to their success.

In 10 semistructured qualitative interviews with family medicine program personnel, common barrier and facilitator themes emerged within interview topics queried (accredi-

TABLE 2. Rural Versus Urban Training Locations[1] for Obstetrics Training Reported by Rural Family Medicine Residency Programs

	Continuity Clinic	Hospital for OB Training	Any Required Rural OB Rotations [2]
PGY1	n=55[3]	n=50	n=17[2]
Urban	25.5%	40.0%	5.9%
Large rural	63.6%	56.0%	70.6%
Small rural	10.9%	4.0%	23.5%
Isolated small rural	0.0%	0.0%	0.0%
PGY2	n=60[3]	n=49	n=24[2]
Urban	15.0%	18.4%	4.2%
Large rural	70.0%	69.4%	62.5%
Small rural	13.3%	12.2%	25.0%
Isolated small rural	1.7%	0.0%	8.3%
PGY3	n=60[3]	n=51	n=21[2]
Urban	15.0%	19.6%	9.5%
Large rural	70.0%	68.6%	66.7%
Small rural	13.3%	11.8%	23.8%
Isolated small rural	1.7%	0.0%	0.0%

Abbreviations: PGY, postgraduate year; OB, obstetrics.
[1]Based on the Rural-Urban Commuting Area categorization of zip codes. Programs were able to provide up to three locations for each PGY for continuity clinics and required rural OB rotations. Not all programs in the sample reported training locations.
[2]If applicable. Required rural OB rotation training locations were reported by 15 programs for PGY1, 20 programs for PGY2, and 19 programs for PGY3.
[3]Continuity clinic locations were reported by 49 programs for PGY1 and 52 programs for PGY2 and PGY3.

TABLE 3. Challenges to Rural Obstetrics Training Reported by Rural Family Medicine Residency Programs

	Major Challenge	Minor Challenge	Not a Challenge	Don't Know or NA
Competition with other OB providers (Ob-Gyn or midwives)	49.1%	30.9%	18.2%	1.8%
Shortage of family medicine faculty providing OB care	47.3%	25.5%	27.3%	0.0%
Shortage of interested or willing faculty[1]	42.6%	27.8%	29.6%	0.0%
Lack of community awareness of family physicians' scope of practice	36.4%	40.0%	23.6%	0.0%
Lack of resident interest in OB	32.7%	34.6%	32.7%	0.0%
Nursing discomfort with resident involvement	25.5%	30.9%	38.2%	5.5%
Insufficient hours or volume	27.3%	45.5%	25.5%	1.7%
Lack of qualified faculty	27.3%	25.5%	45.5%	1.7%
Declining OB patient population	21.8%	43.6%	34.6%	0.0%
Patient outmigration to larger or more urban facilities	20.0%	50.9%	29.1%	0.0%
Insufficiently robust clinical experience	18.2%	38.2%	40.0%	3.6%
Lack of surgical/OB backup	12.7%	21.8%	63.6%	1.8%
Other OB provider changes (taking Medicaid, closing CAH)	10.9%	27.3%	56.4%	5.4%
Lack of OB-trained outpatient clinic staff	10.9%	36.4%	52.7%	0.0%
Lack of designated institutional official/institutional GME support	1.8%	5.5%	87.3%	5.4%

N=55
Abbreviations: OB, obstetrics; CAH, Critical Access Hospital; GME, graduate medical education.
[1]There was one missing response for this survey question.

TABLE 4. Factors Contributing to Rural Family Medicine Residency Program Success in Providing Robust OB Training (Illustrative Survey Responses)

Factor	Illustrative Responses
Faculty Interest and Skill	The longstanding culture of [town name] communities and hospitals is that family docs deliver babies, including C-sections… resident docs in both hospitals are allowed to perform nearly every delivery, even those with [few] OB attendings.
	Strong cohort of family physicians who provide OB care at our critical access hospital. Strong resident interest in OB training. Residents participate/perform all deliveries at our facility. Overall, clinic and hospital administration are supportive of providing OB care.
	Ongoing commitment of the family physicians in our area to providing OB care and the dedication of our remote referral center to support that care
Community and Hospital Support	In order to make this part of our program successful, there will need to be greater community and hospital support for family physicians and residents to provide full OB care.
	An FQHC clinic that takes the mission of delivering high quality prenatal care seriously.
	We do have a long history of providing OB care. Our hospital is supportive of residents learning OB. Some of our community OB/gyns are very supportive of the residents getting OB training including C section training. They understand the areas that our residents will be going and therefore are willing to provide that oversight and teaching.
	Dedicated community practitioners who provide great instruction and a significant tradition and history.
Volume	Continued collaboration with high volume sites for residents to seek elective opportunities
	Strong PGY1 experience in more urban setting prepares residents to impress the somewhat reluctant smaller community OB physicians.
	Strong inpatient OB rotation. Support from urban program gives residents 50-60 deliveries during two OB rotation months.
	Full-scope OB training with 30 weeks of committed OB training in a longitudinal model that promises volume, scope, and continuity… we practice OB in multiple settings from rural critical access to downtown urban to quaternary medical center.
	Our program is not successful in providing robust OB training to our learners. We need a reliable source for high-volume delivery care, so that residents can actively participate in the laboring process without investing large amounts of low-yield time.
Relationships	Relationships between certain residents and OB faculty have improved the overall relationship of the residency with OB faculty.
	Our residency is in a geographic region where there are no family physicians who provide OB services. We work with our OB colleagues to provide this education, and they have quite variable degrees of interest in teaching residents. Our successes have come from fostering positive relationships with these physicians and creating a culture of learning.

Abbreviations: OB, obstetrics; PGY, postgraduate year; FQHC, federally-qualified health center.

tation, institutional sponsorship, economic factors, faculty considerations, resident interest, community context, personnel, policies, and solutions; Table 5). Most programs found accreditation requirements to be helpful leverage for hospital leadership conversations, although some noted difficulty meeting strict numbers and suggested options for flexibility. Multiple programs described a fine balance of the right number of faculty with specific OB skills and experience. Balancing adequate volume to maintain faculty skills with a reasonable lifestyle was key. Programs noted that traditionally OB-heavy programs were able to recruit residents interested in OB based on reputation, while programs with less robust experiences struggled to maintain resident interest.

Interviewees often commented on a lack of community awareness that family physicians practice OB. Program personnel noted a lack of adequate volume due to rural demographics and sharing a limited population with other OB clinicians. The most important personnel considerations were the availability and commitment of interdisciplinary team members (ie, Ob-Gyn specialists, midwives, and OB-trained hospital nurses) to resident learning.

When considering solutions to enhance rural OB training, some interviewees posed expansion of postresidency opportunities like fellowship and mentoring programs to support family medicine OB faculty interested in OB. Another suggested centralized identification of high-volume OB centers for interested family medicine residents to gain more experience.

DISCUSSION

This national, cross-sectional, mixed-methods study explored the current landscape of OB training in rural family medicine residencies. We found that rural OB training is influenced by complex and interrelated factors. Most responding programs trained residents in prenatal care and vaginal deliveries while fewer prepared residents to perform cesarean deliveries. Rural residency programs offered OB training in increasingly rural areas as residents progressed in training, with higher-volume urban experiences in PGY1 to prepare residents for later

TABLE 5. **Barriers and Facilitators to Rural Family Medicine Residency Program Success in Providing Robust OB Training (Illustrative Interview Responses)**

Theme	Illustrative Responses
Accreditation	[Accreditation requirements] don't assist or impair but help make an argument for administration and who to hire.
	[Accreditation] is huge. Might be the only way to hire an FP OB. To be able to say to leadership that this is needed for accreditation…[to have hard numbers] would help with hiring and encouraging OB to help with numbers.
	We got a citation a couple years ago for [not having sufficient numbers].
	I wish that ACGME requirements allowed to tailor to community needs and residents' needs.
Institutional Sponsorship	If the board and administration aren't supportive, this is dead in the water.
	From a rural perspective, you have to have clinical and hospital support.
Economic	We worry all the time something will happen and it will go away – because of loss of personnel or admin saying they do not support that effort.
	For a long time we were the only ones who took [state] Medicaid patients, and Medicaid was not a great payor source for those patients. That was an extra prenatal stream for our residents because no one else wanted it. Interesting dynamics.
Faculty	All of us that chose to come practice here came because we want to do OB.
	Number one need: family physicians who do OB and continue to do it.
	[Residents] have benefitted from faculty who have been in practice and doing OB for 20 years or more.
	It is a key feature that we have so many FP OBs in this organization…we can use that to market our program to new residents coming and we have the perspective to give them good training hopefully.
Resident interest	We are up front in recruiting [residents] that this is an OB-heavy environment.
	Residents are very interested. Residents want to do full scope. [Trying to] sell this idea to our CEO.
	It works well to let residents choose their own path. But if not enough people are interested in the OB part of that, the call schedule won't be sustained.
Community Context	Community is not aware of family physicians doing deliveries.
	If they don't know we're here, they won't choose us.
	Community members and the hospital board driven by community voices demanded that women's health would be in the hospital.
	It's important to continue to build community trust and support, provide safe care, have good outcomes, and good reputation in community.
Personnel	If the nursing staff isn't on board for training residents, it is really difficult.
	Need commitment from local hospital to continue to provide that – have nurses, anesthesia, OR on staff. Need commitment from all players in system.
	Nursing staff is not used to having residents around.
Policies	Every year we have to certify that we're still doing OB, and those who do, the state gives a subsidy to help with malpractice costs.
	I find myself questioning the efficacy of regional/national policies like the ACOG/AAFP joint statement about maternity deserts – locally this was not heard, people can ignore if they disagree. Local policies are more about relationships.
	When you deliver a baby who lives in [neighboring state], we don't get to be the primary care doc after delivery. We see them at the two-week well check, and then they get a PCP in [neighboring state]. That irks all of us that we can't be their doctor. The state lines between us.
Solutions	I think it's really important for programs to exercise family medicine according to the original intent to be all encompassing.
	One thing that could be potentially helpful for our residents that want more OB volume is to identify sites that would be higher volume centers.
	There is limited availability for fellowship training for FM-OB. Anything that would expand fellowship training would expand FM docs in OB.

Abbreviations: FP, family physician; OB, obstetrics; ACGME, Accreditation Council for Graduate Medical Education; ACOG, American College of Obstetricians and Gynecologists; AAFP, American Academy of Family Physicians; PCP, primary care physician.

experiences with less support. Many programs noted difficulty in recruiting and retaining qualified faculty, particularly OB-trained family medicine physicians.

Challenges appeared in clusters. Programs reporting one major challenge to OB training more often noted other major challenges. Programs struggling to provide OB training for residents described a negative feedback loop of low patient volume, lacking educational support (FM faculty and other OB clinicians), and resident interest and competence. In contrast, programs reporting few challenges noted select problems of overabundance (ie, exceeding resident duty-hour restrictions).

To ensure a role for OB care in the future of family medicine, sustainable OB training for rural residents must contain enough experience for family physicians who practice OB to provide excellent perinatal care. The newly proposed Accreditation Council for Graduate Medical Education Family Medicine Review Committee requirements suggesting different numbers of deliveries for residents who do and do not intend to practice OB will present OB training opportunities and challenges for rural residencies. Future research can investigate whether preexisting volume or resources influence program ability to provide advanced OB tracks and how policy changes affect the number of residents prepared for rural OB care.

Economic factors such as malpractice insurance costs as well as closures of Critical Access Hospitals and other rural hospitals were not cited as significant challenges, in contrast to common narratives and prior findings, although our study population excluded programs that had closed.[28] Qualitative responses suggest that existing programs have prioritized support of OB training, in part due to community or hospital recognition of the value of family medicine for local OB care. Further research should examine whether residency programs can exist sustainably in communities with weaker provision of OB services or in hospitals vulnerable to closure, or if a residency providing OB training is protective against hospital or OB unit closure.

Qualitative survey responses and interviews demonstrated the importance of positive relationships between residency personnel and local OB providers/labor nurses and institutional/community culture as key factors for success in OB training. This finding is consistent with other studies.[20,29] A strong presence of family medicine in OB care predicts a greater number of graduates practicing OB, including family medicine presence on a hospital's OB procedure credentialing board and supervision of residency deliveries by family medicine faculty.[29] In our study, respondents mentioned points of conflict between family medicine residents and other members of interdisciplinary OB teams due to a perceived lack of understanding of resident skills and educational goals. When community and hospital partners shared a vision of the goal of OB training for rural family medicine residents, programs noted excellent support from interdisciplinary team members as key factors in their success. Other studies have highlighted initiatives to improve interdisciplinary relationships within the context of family medicine OB training through clinical care, quality improvement, and teaching.[17,20]

Survey findings indicated similar variability in OB training for rural family medicine residencies as described in existing literature.[19] Our findings highlight the mismatch between supply and demand: family medicine residency graduates who desire to continue OB care cite lack of employment opportunities, while in our study rural family medicine programs noted a lack of family medicine OB faculty.[15]

Study limitations include those inherent to self-reported data and small sample size. We found no differences between responders and nonresponders by type of program and geography and training locations of responding programs were predominantly rural, indicating the survey may be generalizable to the intended rural population. Survey respondent demographics and roles were not collected, limiting analysis for risk of bias in quantitative responses. Interviews were primarily completed by program directors and rural site directors; therefore, key perspectives of residents, other faculty, and community partners might be missing.

Strengthening OB training for rural family medicine residencies can improve the quality of OB care for pregnant patients in rural communities. Our findings support prioritizing relationships between family medicine and other OB clinicians, focusing on developing and sustaining family medicine OB faculty, and developing creative solutions to teach and maintain advanced skills in lower-volume settings. Understanding the complexities faced by rural residency programs in providing OB training can augment the work of communities, institutions, and policy makers to improve care delivery for rural patients.

FOOTNOTES

*Codes 1.0, 1.1, 2.0, 2.1, 3.0, 4.1, 5.1, 7.1, 8.1, 10.1
**Codes 4.0, 5.0, 6.0
***Codes 7.0, 7.2, 8.0, 8.2, 9.0
****Codes 10.0, 10.2, 10.3

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