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Understanding and Overcoming Barriers to Rural Training in Family Medicine Obstetrics Fellowships

KEY FINDINGS

- Of 59 family medicine obstetric (FM OB) fellowships identified nationwide, 21 (36%) were rurally oriented, defined as either being rurally located, offering rural-specific training, or prioritizing training rural physicians in their mission.
- Although some programs self-identified as being rurally located, none of the 13 respondents to a survey of rurally oriented fellowships were rurally located according to Rural-Urban Commuting Area (RUCA) codes.
- All respondents reported a mission to train physicians for rural practice. Less than one-third (four programs, 31%) reported their fellowships required rural training.
- Nearly all rurally oriented fellowships reported that their program enabled graduates to provide comprehensive prenatal and delivery care, including vaginal deliveries, C-sections, gynecology procedures, and OB ultrasound.
- The most frequently reported major challenges to providing rural OB training were community factors that included competition with other OB providers (n=4, 31%), declining OB patient populations (n=4, 31%), and lack of community awareness of family physicians' scope of practice (n=3, 23%).
- Fellowship programs infrequently reported major challenges with economics, personnel, administration, or facilities/equipment.

BACKGROUND

Access to obstetrical (OB) services is declining in rural communities.[1] In 2019, nearly one-third of rural counties had no OB clinician.[2] Pregnant patients in rural communities must travel farther to access a hospital with perinatal care than those in urban communities.[3] Lack of access to OB care is associated with rural-urban maternal and child health disparities, including higher rates of preterm birth, complications during birth, and maternal mortality in rural populations.[1,4,5] The decline in rural access to OB care is multifactorial, including rural hospital OB unit closures, social determinants of health (such as income, race/ethnicity, and insurance status), and the declining supply of clinicians who deliver babies.[2,6,7]

Only six percent of obstetrician-gynecologists (OB-GYNs) practice in rural settings,[8] and over half of rural counties have no OB-GYN.[2] Thus, many rural communities rely on family physicians for OB care.[2] In 2017, the majority (63%) of OB providers in rural hospitals were family physicians.[9] Meanwhile, in the prior decade, the proportion of family physicians who delivered babies declined from 23 percent in 2000 to less than 10 percent in 2010.[10]

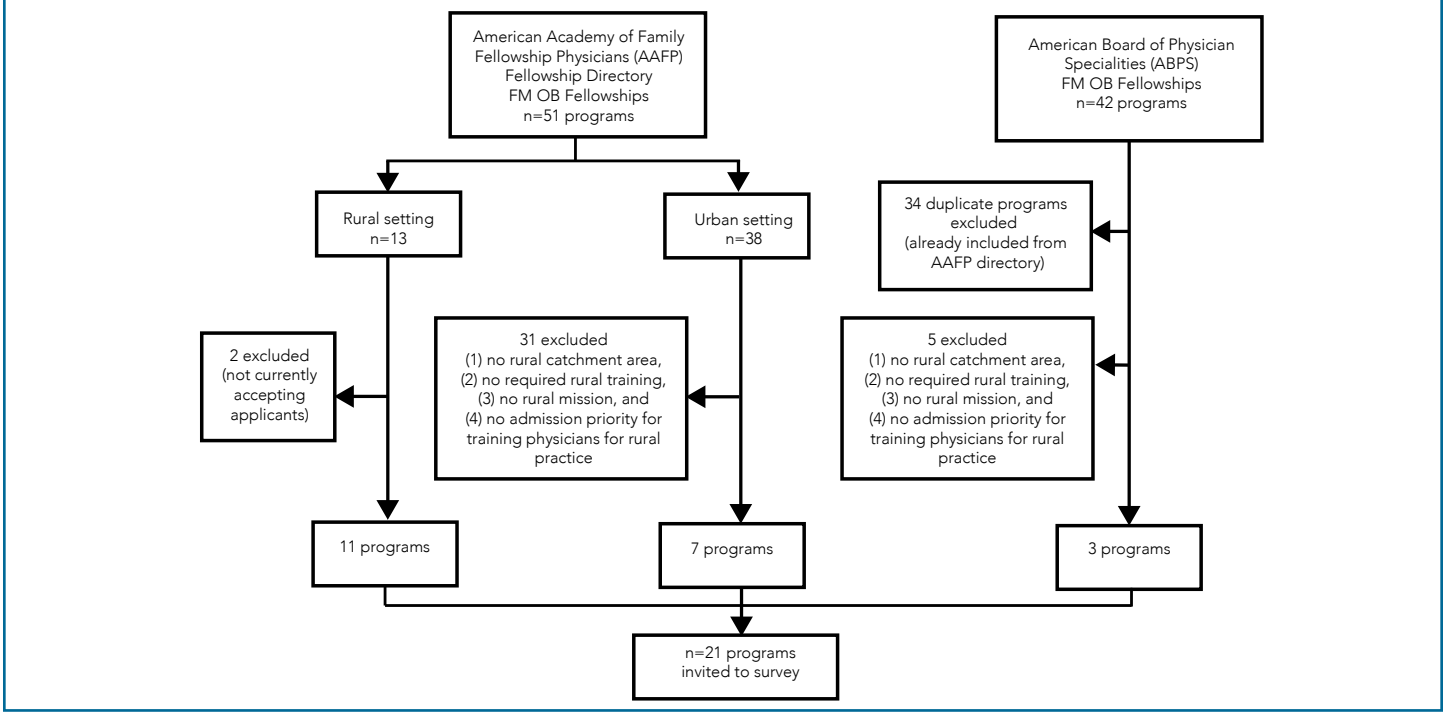
The comprehensiveness of OB training influences the ability of family physicians to include OB in their scope of practice.[11] Family medicine residencies are highly variable in the breadth and depth of training provided in OB care.[11] Many family physicians seek additional post-residency training from a family medicine obstetrics (FM OB) fellowship.[11] FM OB fellowships give graduates additional volume, surgical experience, and exposure to high-risk complications to build competency and confidence to provide advanced OB care in a rural community.[12]

Many family medicine residency graduates seek this additional training because of their interest in providing OB care to rural communities.[13] However, the availability of rural-specific training provided in FM OB fellowships and the unique challenges rurally located and rurally focused programs face in providing OB training are not well understood. The goal of this study was to describe characteristics of rurally oriented FM OB fellowships and challenges these programs face in providing OB training in order to best support the development of the rural OB workforce.

METHODS

We identified 59 unique FM OB fellowship programs using the American Academy of Family Physicians (AAFP) fellowship directory (n=51 programs) and the American Board of Physician Specialties list of FM OB fellowships (n=42 programs total, 8 unique programs not listed on the AAFP directory).[14,15] The AAFP directory designated program setting as "rural" or "urban." We included all programs that self-identified as rural in the AAFP directory. For the remaining programs, we examined program websites as well as their geographic locations and included programs in this study if they (1) served a predominantly rural catchment area, (2) described any required rural-specific or rural-located training, (3) specified in their mission an objective to train family physicians to provide OB care in rural areas, or (4) prioritized applicants for admission who intend to practice in rural areas. We identified rurally located programs or training locations using the RHI Hub "Am I Rural? – Tool."[16] We excluded fellowship programs that had closed or were not currently accepting applicants for the upcoming year. Out of the 59 fellowships, we identified 21 that met our inclusion criteria and invited them to participate in our online survey (see Figure 1 for full inclusion process).

Figure 1. Flowchart of Family Medicine Obstetrics (FM OB) Fellowship Program Inclusion for Survey



We modeled the 65-question online survey after a companion survey of rural family medicine residencies, making modifications appropriate to fellowship training with the input of experts from rural family medicine and family medicine obstetrics education. Survey questions included basic program information, training locations, the program mission, whether programs had a recruitment focus on training rural practitioners, and content of OB training. The questionnaire also asked the extent to which programs experienced 26 challenges ("major," "minor," "not a challenge," or "not applicable") in providing robust OB training. We grouped the challenges in the following six categories: economic, personnel, administration, facilities/equipment, community, and accreditation. An open-ended question asked, "What factors contribute to your program's success in providing robust OB training to learners?"

We made up to nine attempts from August through November 2021 by email or telephone to contact program directors, program coordinators, or associate program directors from fellowship programs that met inclusion criteria to respond to the online survey.

ANALYSIS

Using the 2010 RUCA codes (version 3.1), we classified training location ZIP codes as urban (codes 1.0, 1.1, 2.0, 2.1, 3.0, 4.1, 5.1, 7.1, 8.1, 10.1), large rural (codes 4.0, 5.0, 6.0), small rural (codes 7.0, 7.2, 8.0, 8.2, 9.0), or isolated small rural (codes 10.0, 10.2, 10.3). We report descriptive statistics for survey items. Within the six challenge categories described above, we also calculated combined frequencies of the "major" or "minor" challenges responses. Three authors (EF, SW, DE) conducted a directed content analysis to identify the major themes regarding factors that contribute to fellowship program's success.[17] The University of Washington Human Subjects Division determined that this study was not human subjects research.

RESULTS

Of 21 rurally oriented FM OB fellowships invited to take the survey, 13 responded (61.9%), and results are based on these respondents. Table 1 presents the rurally oriented fellowship characteristics. The median number of years since a program had graduated its first fellow was 18 years, and one had been graduating fellows for 42 years. Most were located in the West (n=7, 53.9%) and South (n=4, 30.8%) Census Regions. All but two (84.6%) were community-based. About three-quarters (n=10, 76.9%) were associated with a residency program, all of which were family medicine residencies. Eleven (84.6%) responding fellowship programs were 12 months in duration; two (15.4%) were 24 months. Fellowships had a median of five dedicated fellowship faculty members. The median number of total graduates over the past five years combined was eight. The 13 respondents reported a combined total of 134 fellowship graduates over the past 5 years.

Table 1. Characteristics of Rural Family Medicine Obstetric Fellowships (n=13)

Characteristic	
Program type, n (%)	
Community based, non-affiliated	5 (38.5%)
Community based, medical school affiliated	6 (46.2%)
Community based, medical school administered	0 (0%)
Medical school based	2 (15.4%)
Census Region, n (%)	
Northeast	0 (0%)
Midwest	2 (15.4%)
South	4 (30.8%)
West	7 (53.9%)
Obstetric training sites, n (%)[1]	
Federally Qualified Health Center	7 (53.9%)
Critical Access Hospital	4 (30.8%)
Rural Health Clinic	4 (30.8%)
Indian Health Service	0 (0%)
Title X	0 (0%)
None of the above	3 (23.1%)
Program length, n (%)	
12 months	11 (84.6%)
24 months	2 (15.4%)
Dedicated faculty, median (range)	5 (0-25)
Years since graduating first fellow, median (range)[2]	18 (2-42)
Number of graduates in past 5 years, median (range)	8 (1-25)
Program associated with a family medicine residency, n (%)	10 (76.9%)
Training rural family medicine OB physicians is part of program mission, n (%)	13 (100.0%)
Actively recruits applicants with interest in rural practice, n (%)	12 (92.3%)
Requires fellows to complete rural training, n (%)	4 (30.8%)
Source of funding for malpractice insurance, n (%)	
Private insurance (self or clinic pay)	2 (15.3%)
Sponsoring institution	9 (69.2%)
Federal government	1 (7.7%)
State government	0 (0%)

[1]Multiple responses were possible; percentages do not total 100.
[2]Missing response from 1 program.

All rurally oriented fellowship programs indicated that training rural family medicine OB practitioners was part of their missions, and all but one (n=12, 92.3%) actively recruited fellowship applicants with an interest in rural practice. Just under a third of programs (n=4, 30.8%) reported requiring rural training, either through a rurally focused curriculum or being located in a rural setting (though none of the responding programs were in a rural location according to RUCA codes). Of the three fellowships that reported OB outpatient clinic locations, all (100.0%) reported that their outpatient clinics were urban (Table 2). Of the four fellowships reporting the locations of hospitals for OB training, three (75.0%) were also urban (Table 2). Of five fellowships that reported required rural OB rotation locations, the majority were in small rural areas (n=4, 80.0%), and one (20.0%) was in a large rural area. No programs reported required OB training in isolated small rural areas. However, only about one-third of programs (n=5, 38.5%) provided ZIP codes for these questions.

Table 2. Locations of Obstetrics Training Reported by Rural Family Medicine Obstetric Fellowship Programs by Rural-Urban Location[1]

	Outpatient clinic (n=3)[2] n (%)	Hospital for OB training (n=4)[2] n (%)	Required rural OB rotations (n=5)[2] n (%)
Urban	3 (100.0%)	3 (75.0%)	0 (0%)
Large rural	0 (0%)	0 (0%)	1 (20.0%)
Small rural	0 (0%)	1 (25.0%)	4 (80.0%)
Isolated small rural	0 (0%)	0 (0%)	0 (0%)

[1]Location ZIP codes classified according to Rural-Urban Commuting Area (RUCA) codes
[2]Missing clinic ZIP code responses from 10 programs, hospital ZIP codes from 9 programs, and rural rotation ZIP codes from 8 programs

All rurally oriented fellowship programs agreed their OB curriculum enables graduates to provide comprehensive prenatal and delivery care, including vaginal deliveries; perform operative obstetrics, including C-sections; and perform surgical gynecology procedures (Table 3). All but one program (n=12, 92.3%) stated they equip residents to perform OB ultrasound. Over three-quarters of programs offered credentialing experiences in the Neonatal Resuscitation Program (NRP: n=10, 76.9%) and Advanced Life Support in Obstetrics (ALSO: n=11, 84.6%), and fewer than half in Pediatric Advanced Life Support (PALS: n=5, 38.5%).

Table 3. Obstetric Training Curriculum Reported by Rural Family Medicine Obstetric Fellowship Programs (n=13)

Program provides training that will enable graduates to perform:	n (%)
Comprehensive prenatal and delivery care, including vaginal deliveries	13 (100.0%)
Operative obstetrics, including C-sections	13 (100.0%)
OB ultrasound	12 (92.3%)
Surgical gynecology (e.g., dilation and curettage, bilateral tubal ligation)	13 (100.0%)
Other general surgery skills in the operating room (OR)	4 (30.8%)
Advanced Life Support in Obstetrics (ALSO)	11 (84.6%)
Neonatal Resuscitation Program (NRP)	10 (76.9%)
Pediatric Advanced Life Support (PALS)	5 (38.5%)

Challenges to providing robust OB training are shown in Table 4. The most frequently reported challenges were in the community category. Nearly one-third (n=4, 30.8%) of rurally oriented fellowships reported "competition with other OB providers" as a major challenge, and almost half (n=6, 46.2%) reported this as a minor challenge. About one-third of programs (n=4, 30.8%) reported "declining OB patient populations" as a major challenge, and about one-quarter (n=3, 23.1%) of programs reported this as a minor challenge. Just under one-quarter of fellowships reported "lack of community awareness of family physicians' scope of practice" (n=3, 23.1%) as a major challenge, and about half (n=6, 46.2%) reported this as a minor challenge. Other commonly reported minor challenges were in the general, personnel, and administration categories. About one-third (n=4, 30.8%) of programs reported "insufficient hours or volume," "insufficiently robust clinical experience," and "OB unit closure" as minor challenges. One-quarter (n=3, 25.0%) of programs reported "shortage of interested, willing faculty" as a minor challenge. Over two-thirds of fellowships did not consider economics, personnel, and facilities/equipment to be challenges.

Table 4. Challenges to Rural Obstetrics Training Reported by Rural Family Medicine Obstetric Fellowship Programs (n=13)

	Major challenge n (%)	Minor challenge n (%)	Not a challenge n (%)	Don't know or not applicable n (%)
General				
Insufficient hours or volume	1 (7.7%)	4 (30.8%)	8 (61.5%)	0 (0%)
Insufficiently robust clinical experience	0 (0%)	4 (30.8%)	9 (69.2%)	0 (0%)
Lack of qualified faculty	0 (0%)	1 (7.7%)	12 (92.3%)	0 (0%)
Economic				
Lost clinic revenue for providers called to delivery	1 (7.7%)	3 (23.1%)	8 (61.5%)	1 (7.7%)
Hospital OB service line cost	0 (0%)	2 (15.4%)	8 (61.5%)	3 (23.1%)
Malpractice insurance cost	0 (0%)	1 (7.7%)	10 (76.9%)	2 (15.4%)
Personnel				
Shortage of interested, willing faculty[1]	0 (0%)	3 (25.0%)	8 (66.7%)	1 (8.3%)
Shortage of family medicine faculty providing OB care	0 (0%)	3 (23.1%)	9 (69.2%)	1 (7.7%)
Lack of OB-trained outpatient clinic staff	0 (0%)	2 (15.4%)	10 (76.9%)	1 (7.7%)
Lack of other provider support (e.g., anesthesia, neonatal)	0 (0%)	2 (15.4%)	10 (76.9%)	1 (7.7%)
Lack of OB-trained hospital nurses	0 (0%)	1 (7.7%)	11 (84.6%)	1 (7.7%)
Nursing discomfort with fellow involvement	0 (0%)	1 (7.7%)	11 (84.6%)	1 (7.7%)
Lack of surgical/OB backup	0 (0%)	0 (0%)	12 (92.3%)	1 (7.7%)
Administration or hospital support				
Lack of Designated Institutional Official (DIO)/institutional graduate medical education support	2 (15.4%)	3 (23.1%)	7 (53.8%)	1 (7.7%)
OB unit closure	0 (0%)	4 (30.8%)	8 (61.5%)	1 (7.7%)
Hospital closure	0 (0%)	1 (7.7%)	10 (76.9%)	2 (15.4%)
Facilities and equipment				
Shortage of OR suites	1 (7.7%)	3 (23.1%)	8 (61.5%)	1 (7.7%)
Lack of dedicated labor rooms	1 (7.7%)	0 (0%)	10 (76.9%)	2 (15.4%)
Availability of equipment in clinic (ultrasound, fetal monitoring, labs, microscope)	0 (0%)	3 (23.1%)	9 (69.2%)	1 (7.7%)
Outdated facilities or equipment	0 (0%)	2 (15.4%)	10 (76.9%)	1 (7.7%)
Availability of equipment in hospital (ultrasound, fetal monitoring, labs, microscope)	0 (0%)	1 (7.7%)	11 (84.6%)	1 (7.7%)
Community				
Competition with other OB providers (e.g., OB/GYN practices or midwives)	4 (30.8%)	6 (46.2%)	2 (15.4%)	1 (7.7%)
Declining OB patient population	4 (30.8%)	3 (23.1%)	6 (46.2%)	0 (0%)
Lack of community awareness of family physicians' scope of practice	3 (23.1%)	6 (46.2%)	4 (30.8%)	0 (0%)
Other OB provider changes (taking Medicaid, closing Critical Access Hospital)	2 (15.4%)	2 (15.4%)	8 (61.5%)	1 (7.7%)
Patient outmigration to larger or more urban facilities	2 (15.4%)	2 (15.4%)	7 (53.8%)	2 (15.4%)

[1]Missing 1 response.

Key: Combined "Major" and "Minor" challenge frequencies shaded according to these groupings:

0-20%	21-40%	41-60%	61-80%

Qualitative themes arising from survey responses highlighted four key areas for program success (Table 5):

1. Key role of fellows in patient care and teaching
2. Established culture of FM OB care
3. Commitment of OB providers
4. Shared mission with stakeholders

Fellowship programs noted fellows to be central to OB care and education for other trainees within the institution, specifically serving as care provider and/or team leader for particularly high-risk or high-complexity cases. Some programs credited their success in part to the history or legacy of FM serving as primarily responsible for clinical care and education, rather than OB specialists as the default. For adequate educational volume and achieving operative competencies, programs rely on OB clinicians to precept fellows and share patient load, which is often built on a shared understanding of the mission of FM OB training.

Table 5. Factors Contributing to Rural Family Medicine Obstetrics Fellowship Program Success in Providing Robust OB Training (Illustrative Open-Ended Survey Responses)

Factors	Survey responses
Key role of fellows in patient care and teaching	We are a high-volume/high-risk facility, and our fellows are fully incorporated into all daily operations on the [labor and delivery] unit. They are the OB team leaders for all learners on the OB service.
	We do not "risk out" [transferring to OB service or leaving the FM OB fellow out of the care team] unless the patient is better handled at a higher level of care
	FM OB service provides all medical consults for the other OB services
	Our OB service is the default service for our MFM [maternal fetal medicine] providers
	High volume of c-sections (average 140), MFM teachers and antepartum care experience with them
Established culture of family medicine OB care	Long legacy of family medicine practicing high-risk and surgical OB at this institution.
	Culture of addressing health inequity
	All OB providers in the hospital, from FM to perinatology, work with our fellows and residents and rely on them to care for their patients.
Commitment of OB providers	Our program is led by our OB/GYN providers, and they work with them during their 6 months on OB.
	We have a robust inpatient hospitalist service who are the primary mentors and surgical educators for our fellows.
Shared mission and vision with stakeholders	The physician staff and hospital administration understand the mission of training surgically competent FM OB for rural and underserved populations who are not reached by usual OB services.
	All of our OB/GYNs are committed to training FM residents and fellows to support better care for our patients in rural areas.
	Strong support from the sponsoring institution's administration and OB/GYNs

MFM – maternal fetal medicine, OB – obstetric, OB/GYN – obstetrician/gynecologist, FM – family medicine

DISCUSSION

FM OB fellowships are driven by the mission of creating FM OB clinicians who can fill gaps in care, particularly in rural areas. Programs prepare fellows to provide comprehensive OB care with an emphasis on operative deliveries. Challenges that rurally oriented FM OB fellowships face often stem from insufficient birth volume, and community factors can play a role. Competition with other OB providers, declining OB patient populations, and lack of community awareness of family physician scope of practice can lead to low volume. FM OB fellowships require significant support from institutional structures and OB/GYN providers to provide fellows with enough repetition and variety to be prepared for the patient acuity and complexity they will become responsible for after training.

Although some programs self-identified as rural, none of the respondent fellowships were rurally located according to RUCA codes. This is likely due to density of teaching resources and patient volume/complexity needed to provide advanced OB training. Obstetric skills are translatable to rural settings and some fellowship graduates do practice rurally. Existing evidence in medical education supports rural training as a key element of future rural practice.[18,19] Given the few current opportunities for advanced OB training in rural places, further investigation is needed to understand whether practice outcomes differ between rurally oriented programs that offer more and less rural training.

Some challenges identified, such as competition from OB providers and lack of community awareness of family physician scope of practice, could be addressed by locating FM OB fellowship training, or portions of training, in rural areas where there are not obstetricians and communities more readily understand FM scope. Funding for required rural rotations for fellows could support rural place-based training. Rural location of training may have other benefits related to place-based education that draws upon cultural, natural, economic, and civic features of a learning site.[20]

Fellowships reported that multiple personnel factors (lack of qualified faculty, nursing discomfort with fellow involvement) were "not a challenge," indicating existing fellowships have overcome these common barriers to training in residency settings.[21] This is further supported by the qualitative findings showing that some programs enjoy a long history of success and collaborative relationships with their health systems and community OBGYNs.

Considering the demand for FM OB clinicians in rural areas, the limited number of fellowship programs producing a few graduates per year is not sufficient to support the workforce need.[22] Programs to support rurally located FM OB fellowship creation, similar to the current Rural Residency Planning and Development program, could spur program growth and development.[23] Current FM OB fellowship training is structurally a "one size fits all" experience: nearly all programs are one year in length, urban located, and housed in community-based hospitals associated with residency programs. Additionally, some FM residency graduates who are interested in enhanced OB training cannot, or are unwilling to, accept a year of low earnings in fellowship when they could earn a practicing physician salary. Do fellowships need to be one year long? Can they be located in rural areas? Solutions to these problems demand creativity on the part of educators and policy makers.

A key strength of this study is a robust survey response rate among most rurally oriented FM OB fellowships. Limitations include the use of self-reported data and a small sample size. Some survey questions had limited responses, particularly the reported training locations. This limits our ability to fully characterize how much training in FM OB fellowships is rural versus urban. Our results also do not reflect the perspectives of current FM OB fellows, fellowship graduates, fellowship faculty, or community stakeholders. Our sample also did not include fellowships that had closed. These programs may have faced unique challenges to fellowship sustainability that our results did not capture.

CONCLUSIONS AND POLICY IMPLICATIONS

Rural communities rely on family physicians to provide OB care. In many rural communities, advanced training beyond residency is needed to support physician scope of practice and improve access and outcomes for rural birthing patients. Lack of rural OB patient volume limits the current availability of rural FM OB fellowship training, which could be improved by increasing collaboration among perinatal teams, including OB and midwife groups. Policy efforts to strengthen rural training opportunities for OB-inclined family medicine trainees could include provision of funding and infrastructure to create new or expand existing rural fellowship programs. In partnership with rural communities and institutions, alternatively structured FM OB fellowships could allow for more family physicians to receive enhanced training to practice OB in rural areas.

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AUTHORS

Sara Woolcock, MPH, WWAMI Rural Health Research Center, University of Washington
Erin Fredrickson, DO, MPH, University of Washington Family Medicine Residency
David V. Evans, MD, Department of Family Medicine, University of Washington
C. Holly A. Andrilla, MS, WWAMI Rural Health Research Center, University of Washington
Lisa A. Garberson, PhD, WWAMI Rural Health Research Center, University of Washington
Davis G. Patterson, PhD, WWAMI Rural Health Research Center, University of Washington

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University of Washington • School of Medicine
Box 354982 • Seattle WA 98195-4982
phone: (206) 685-0402 • fax: (206) 616-4768
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