Impending shortage of orthopedic surgeons in rural communities and its impact on access to care

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INTRODUCTION:
Rural parts of the United States are disproportionately affected by diminished health care access and quality, yet there is limited study defining this issue within orthopedic surgery. As such, this study aims to better quantify trends in rural access to orthopedic surgical care by comparing stage-of-career representation among urban and rural based orthopedic surgeons.
METHODS: The study analyzed the Centers for Medicare and Medicaid Services (CMS) Doctors and Clinicians national downloadable file for all orthopedic surgeons. Rural practice settings were defined using USDA Rural-Urban Commuting Area (RUCA) codes (urban: 1-5; rural: 6-10). Stage of practice was defined by years since medical school graduation (early-career: less than 10; mid-career: 10-25; late-career: more than 25). Multivariable analysis analyzed the independent association of stage of practice and rurality, controlling for degree (MD vs DO), gender, and subspecialization.
RESULTS:
When stratified by years since medical school graduation, rural areas are disproportionately served by late-career orthopedic surgeons (50.9% vs 44.3%) compared to urban settings (Figure 1). Conversely, early-career (7.6% vs 10.5%) and mid-career (45.2% vs 41.5%) surgeons are more concentrated in urban areas. Telemedicine was also used significantly less often in rural practices than urban practices (4.0% vs 11.2%, p<0.001). On multivariable analysis, both mid-career (aOR 1.55, 95% CI 1.40-1.71, p<0.001) and late-career (aOR 1.57, 95% CI 1.43-1.73, p<0.001) stage of practice were independent predictors of increased odds of practicing rurally (Table 1). Other significant variables were subspecialization (aOR 0.58, 95% CI 0.50-0.66, p<0.001), DO degree (aOR 1.85, 95% CI 1.67-2.04, p<0.001), and female gender (aOR 0.81, 95% CI 0.68-0.95, p=0.013).
DISCUSSION AND CONCLUSION: The analysis revealed significant disparities in the distribution of orthopedic surgeons practicing in rural versus urban settings. This trend highlights an impending shortage of younger orthopedic surgeons in rural communities, with the current rural workforce nearing retirement age. The lack of telemedicine usage in rural practices will exacerbate this trend. The diminishing pipeline of new orthopedic surgeons entering rural practice and the lack of utilization of telemedicine could exacerbate existing healthcare access challenges in these areas, leaving populations at risk of reduced availability of specialized orthopedic surgical care.

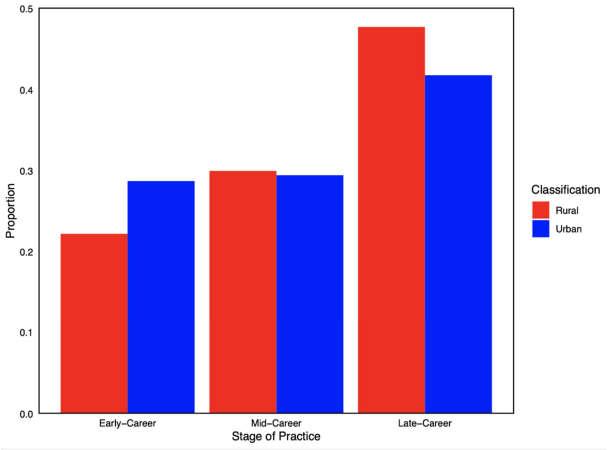

Figure 1: Stage of Practice Among Rural vs Urban Orthopedic Surgeons

Table 1: Multivariable analysis of rurality

		aOR (95% CI)	p-value
Stage of career	Early Career	Reference	
	Mid-Career	1.55 (1.40-1.71)	<0.001
	Late Career	1.57 (1.43-1.73)	<0.001
Subspecialization		0.58 (0.50-0.66)	<0.001
Degree	MD	Reference	
	DO	1.85 (1.67-2.04)	<0.001
Gender	Male	Reference	
	Female	0.81 (0.68-0.95)	0.013