Impact of Rurality on Access to Complex Urological Surgery

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Introduction

The 2018 AUA Census revealed that 63% of counties (n=1968) in the United States do not have a practicing urologist.

While previous studies have shown increased travel distances for rural beneficiaries¹, it is unknown how rurality impacts access to complex urologic care (e.g. cystectomy, partial nephrectomy, PCNL)

Methods

Data sources

Medicare

20% Medicare Provider Analysis and Reviewer (MedPAR) inpatient claims from 2016

US Census data to determine rurality

Definitions



Core-based statistical area (CBSA) used to categorize counties

- Metropolitan (>50k people)
- Micropolitan (between 10 and 50k people)
- Non-CBSA or rural (<10k people)

Complex urologic surgery CPT codes

- Cystectomy
- Partial nephrectomy
- Percutaneous nephrolithotomy (PCNL)

One-way distance (miles) between providers and patients calculated based on zip codes

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Reference:

Juan J. Andino, MD, MBA¹; Zoey Chopra, BA²; Ziwei Zhu MS³, Chad Ellimoottil, MD, MPH^{1,3}

Results

Geographic distribution of patients and providers

	Metropolitan	Micropolitan	Non-CBSA
Patients	79%	13%	8%
Providers	87%	8%	5%

Where do patients travel for high complexity urologic care

		Providers		
		Metropolitan	Micropolitan	Non-CBSA
S	Metropolitan	94.6%	2%	3.4%
tient	Micropolitan	55%	40.2%	4.8%
Ра	Non-CBSA	70.9%	18.4%	10.7%

Patients and providers are categorized by geography to highlight where patients traveled for complex urologic care





Results

Number of urologists per 100k patients based on provider location

		All urologists	Complex urologic care
	Metropolitan	17	4.4
	Micropolitan	12	2.8
	Non-CBSA	14	4.6

County-level distance to urologist who performs complex urologic surgery

Discussion

~25% of urologists performed complex urologic surgery; however, 71% traveled to metropolitan areas for this care and rural patients traveled 4x longer than patients in metropolitan areas.

These findings can guide future work on evaluating the relationship between distance to urologic care and health disparities; optimizing post-operative follow up; and mitigating expected workforce shortages.

