

OBJECTIVES

- Both ureteroscopy and percutaneous nephrolithotomy (PCNL) carry higher risk of postoperative complication and readmission in comorbid patients.¹⁻²
- Hospital and facility payments for stone episodes are risk-adjusted to account for patient complexity.
- Likely in part due to differences in the Geographic Practice Cost Index (GCPI), rural physicians are often reimbursed less compared with their urban counterparts while operating on more complex patients with fewer resources.³⁻⁵
- We sought to investigate trends in patient complexity, practice setting, and Medicare reimbursement for stone procedures.

METHODS

- The “2021 Medicare Physician and Other Provider” file from CMS was used to collect mean patient Hierarchical Condition Category (HCC) risk scores and Rural-Urban Commuting Area (RUCA) codes of US urologists.
- HCC score is based on age, sex, and ICD-10 diagnoses where a score of 1.0 represents an average patient and higher scores indicates increased comorbidity.
- RUCA codes classify US census tracts using measures of population density, urbanization, and daily commuting from 1 to 10 where a score of 1 indicates a metropolitan core and higher scores indicate increasingly rural areas.
- Medicare reimbursement for all procedures billed to Medicare in 2021 under CPT codes for ureteroscopy and PCNL were collected.
- Student T-tests were used to compare HCC scores, RUCA codes, and Medicare reimbursement.
- Linear regressions were performed to predict changes in reimbursement based on RUCA and HCC scores.

RESULTS

CPT Code	52356	50080	50081	P-value
Total Services	52816	1649	1496	< 0.001
Mean ± SD				
Reimbursement (USD)	338.24 ± 31.96	957.89 ± 177.16		< 0.001
HCC Score	1.35 ± 0.25	1.56 ± 0.38		< 0.001
RUCA Score	1.34 ± 1.02	1.08 ± 0.47		0.02

TABLE 1: Total services billed to Medicare in 2021 under CPT codes 52356 (ureteroscopy) and 50080 (PCNL < 2 cm), 50081 (PCNL > 2 cm) along with mean reimbursement, HCC scores, and RUCA scores for all episodes.

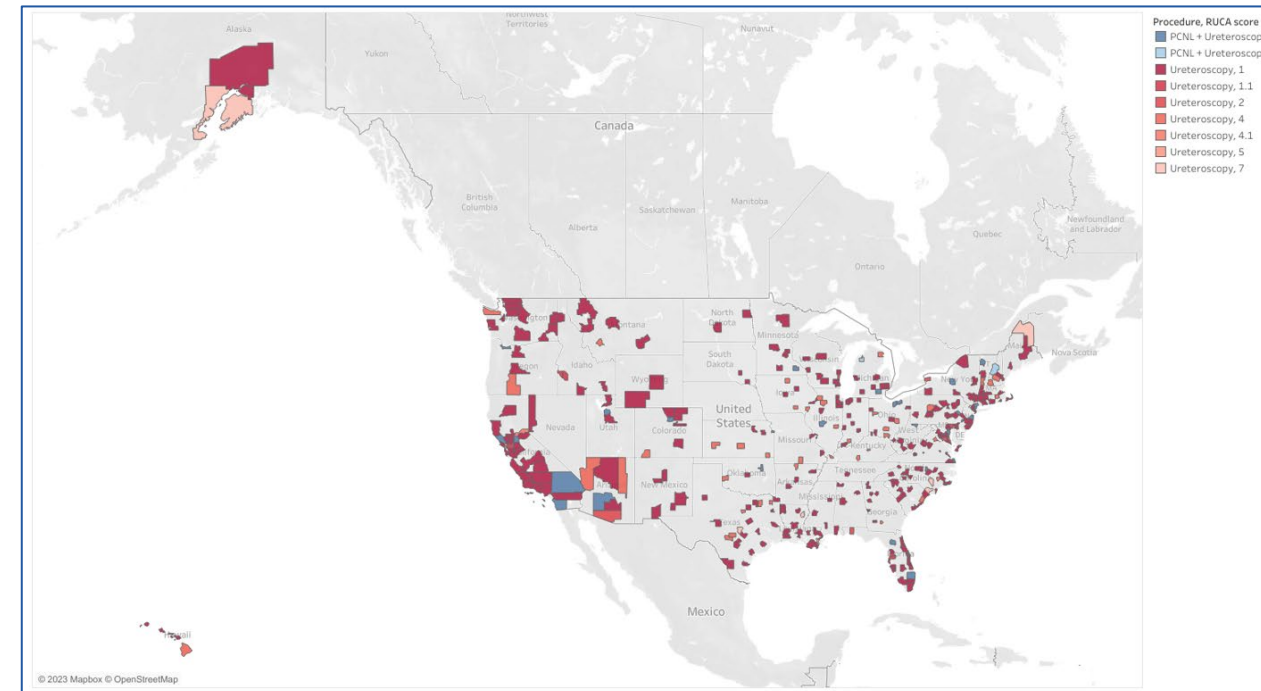


FIGURE 1: Distribution of US urologists who routinely perform ureteroscopy and PCNL on Medicare patients by RUCA score.

		β 1 coefficient	95% Confidence Interval	P-value
Ureteroscopy	HCC Score	-22.75	-27.60, -17.90	< 0.001
	RUCA Code	-2.80	-4.00, -1.60	< 0.001
PCNL	HCC Score	139.36	40.11, 238.60	< 0.01
	RUCA Code	17.39	-67.25, 102.03	0.68

TABLE 2: Linear regression model examining the impact of HCC score (higher score indicating greater patient complexity) and RUCA code (higher code indicating more rural practice setting) on reimbursement for ureteroscopy and PCNL.

RESULTS

- RUCA scores ranged from 1 to 7 for ureteroscopy compared with 1 to 4 for PCNL (Figure 1).
- Of urologists performing ureteroscopy, 87% operated in a metropolitan (RUCA 1) area compared with 98% for PCNL.
- For ureteroscopy, higher HCC score significantly predicted lower reimbursement, while higher HCC score significantly predicted higher reimbursement for PCNL (Table 2).
- Higher RUCA score was associated with lower reimbursement for ureteroscopy, however there was no association between RUCA score and reimbursement for PCNL (Table 2).

CONCLUSIONS

- More complex Medicare patients are associated with lower reimbursement for ureteroscopy, which may be in part due to geographic patterns in urologic practice and subsequent variations in GCPI and reimbursement.
- Higher RUCA code, indicating more rural area, was associated with lower reimbursement for ureteroscopy indicating rural urologists are reimbursed less.
- Ureteroscopy was performed in a wider range of practice settings than PCNL, which was almost exclusively performed in urban centers.
- The association between higher reimbursement and increased patient complexity for PCNL may reflect referral of complex patients requiring PCNL to tertiary centers in metropolitan areas, where reimbursement benefits from geographic adjustment.
- It is possible that relatively lower reimbursement for treatment of complex patients is a barrier to sustaining rural urology practices.
- Incentivizing providers to work in rural areas and treat patients within the scope of their practice is critical to ensuring continued access to quality urologic care across the country.

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