Correlation of mpMRI findings and prostatectomy pathology across Pennsylvania Urologic Regional Collaborative (PURC).

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PURC
PENNSYLVANIA UROLOGIC REGIONAL COLLABORATIVE

Background

- mpMRI is a valuable diagnostic and surveillance tool and is being rapidly adapted for diagnosis, staging, pre-treatment planning, and AS
- Recent critical literature review by AUA MRI Consensus Panel estimated expected performance metrics for MRI in several domains

	Sens	Spec	PPV	NPV
EPE	49-81%	68-90.6%	36-67%	83-95%
SVI		96-98%	70-79%	

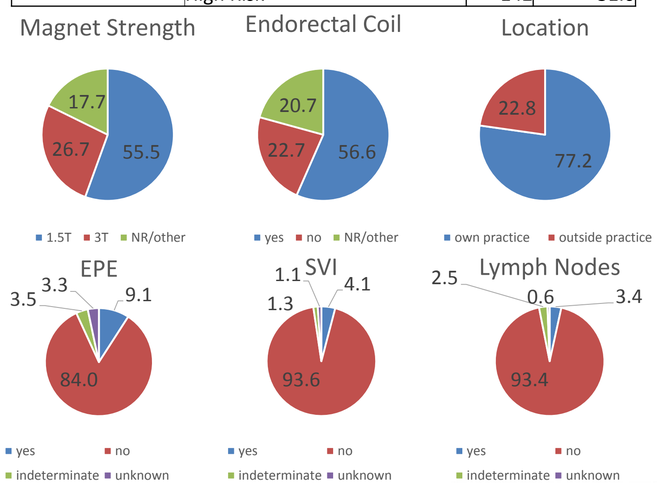
- mpMRI performance characteristics may vary significantly by institution
- We characterize patterns of MRI utilization and quantify MRI-pathologic concordance across a regional collaborative

Methods

- PURC is a prospective regional collaborative comprised of nine large academic and private urology practices in Pennsylvania and New Jersey, launched in 2014
- Demographic and clinicopathologic data for patients with newly-diagnosed CaP were abstracted
- For patients treated with radical prostatectomy, radiographic and pathologic concordance was characterized using descriptive statistics
- Spearmen correlation was used to assess relationship between mpMRI performance and practice volume

Table 1: Clinicopathologic Characteristics (N=458)

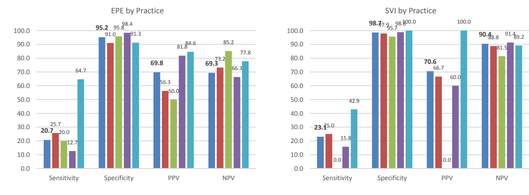
Age	median, IQR	64	59 - 69
Race N, %	AA	77	16.8
	White	358	78.2
	Other/NR	23	5.0
PSA	median, IQR	6.4	4.8-9.3
cTstage N, %	T1a/b	1	0.2
	T1c	354	77.3
	T2a	54	11.8
	T2b/c	24	5.2
	T3/4	18	3.9
	NR/other	7	1.5
cNstage N, %	N0	191	41.7
	N1	3	0.7
	Nx/NR	264	57.6
cMstage N, %	M0	288	62.9
	M1	3	0.7
	Mx	167	36.5
AUA risk category N, %	Very Low Risk	11	2.4
	Low Risk	54	11.8
	Favorable Intermediate Risk	145	31.7
	Unfavorable Intermediate Risk	106	23.1
	High Risk	142	31.0



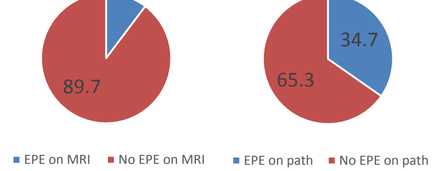
Results

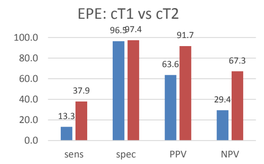
- May 2015 – September 2017
- 1,724 (33%) had mpMRI
- 931 (54%) had detailed radiographic and clinicopathologic characteristics
- 458 (49%) underwent radical prostatectomy (Table 1) and were included in radiographic/pathologic correlation analysis

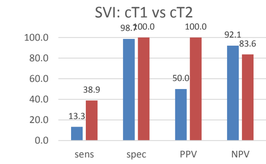
	Sens	Spec	PPV	NPV
EPE	20.7%	95.2%	69.8%	69.3%
SVI	23.1%	98.7%	70.6%	90.4%

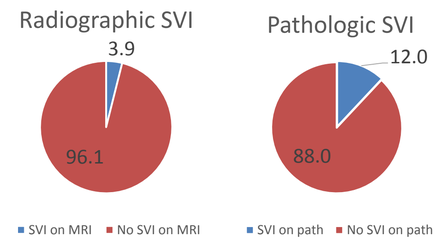


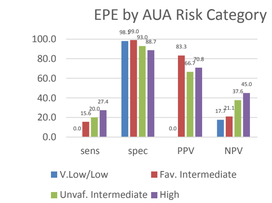
No statistically significant improvement observed by practice volume; Spearmen Correlation 0.2-0.8

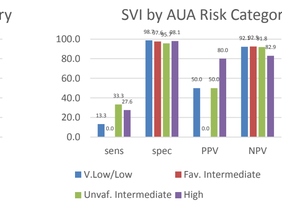












Conclusions

- MRI performance differed significantly from previously reported literature
- Significant variation in mpMRI performance was observed across practices
- Practice volume did not appear to influence mpMRI performance

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