

**Title:** Regional variation in prostate MRI utilization: Results from the Michigan (MUSIC) and Pennsylvania (PURC) Urologic Collaboratives

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**Introduction and Objective:** Multi-parametric magnetic resonance imaging (mpMRI) is being rapidly adapted in various clinical settings of prostate cancer care. We evaluate regional variation in mpMRI utilization across the Michigan Urological Surgery Improvement Collaborative (MUSIC) and Pennsylvania Urologic Regional Collaborative (PURC).

**Methods:** MRI utilization surveys were distributed electronically to urologists participating in MUSIC and PURC. Descriptive statistics were performed and notable trends reported.

**Results:** An MRI utilization survey was distributed to 50 MUSIC and 50 PURC participants on January 2015 and October 2015, respectively. There was a 58% overall response rate. 70% of the respondents reported MRI utilization in the diagnosis and/or management of prostate cancer, including 37% in MUSIC (10 of 28) and 100% in PURC (30 of 30), respectively ( $p < .0001$ ). Endorectal coil utilization was reported by 56%, including 20% of MUSIC and 69% of PURC urologists ( $p = 0.025$ ), respectively. Among respondents who offered mpMRI, the type of system used was 3.0 Tesla (55%), 1.5 Tesla (20%), or unknown (25%). When ordering MRI for staging, 74% indicated that they would use it in lieu of computed tomography. Respondents estimated that MRI was utilized in 26% of patients with newly diagnosed prostate cancer and 38% on active surveillance. The information of greatest interest to providers from mpMRI was determination of extraprostatic disease (38%), followed by detection of high Gleason score

lesions (35%), and staging information (15%). PURC had greater use of PI-RADS (63% vs. 10%: MUSIC), while prostate lesions were more commonly characterized descriptively in MUSIC 80% vs. PURC: 23%,  $p=0.002$ ). The most common reason that respondents indicated for not utilizing MRI technology was uncertainty of the literature/data (Table).

**Conclusions:** Significant regional variation in indications, utilization, and reporting of mpMRI results is recognized across participants as well as between regional collaboratives with higher utilization among urologists in Pennsylvania.

<b>Table.</b> Reasons indicated by 18 MUSIC urologists for not using mpMRI for the diagnosis or management of prostate cancer	
Uncertain of the literature / data	50% (n=9)
Too expensive	39% (n=7)
MRI equipment not available	33% (n=6)
Specially-trained radiologist not available	28% (n=5)
Uncomfortable with accuracy of reports	22% (n=4)
Difficulty with reimbursement	22% (n=4)
Other	11% (n=2)