Implementation of a State-Wide Quality Assurance Initiative for Prostate MRI and Fusion Biopsy
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INTRODUCTION AND OBJECTIVE: Rapid and widespread dissemination of prostate MR and fusion biopsy (FBx) has resulted in variation in quality of care due to radiologist, urologist, and technical factors. We aim to describe initial outcomes from the Michigan Urological Surgery Improvement Collaborative (MUSIC) MR/FBx quality assurance program as a novel framework for provider- and practice-level evaluation, feedback, and quality improvement.

METHODS: The prospective MUSIC MRI/FBx registry was queried from 8/2017-9/2019 for imaging, patient, and pathology characteristics at the practice and provider level. Radiology and urology input informed development of a novel quality metric scorecard with benchmarking and target thresholds. Scorecards with anonymous peer comparator data were shared with radiology and urology practices and providers to inform performance and identify variation to be targeted with improvement activities (Figure 1). Ongoing quality improvement activities included FBx proctoring from expert users and on-site multidisciplinary reviews with radiologists, urologists, pathologists, and staff.

RESULTS: Data was collected on 5517 MRIs from 40 practices and 2375 fusion biopsies from 22 practices. Across all domains, the collaborative was in the benchmark range (green) or within 10% (yellow) but was >10% outside for PIRADS ≥GG2 cancer detection rate (CDR). The sample practice demonstrated a PIRADS 5 CDR ≥10% outside the range (44%, red), potentially due to PIRADS misclassification, or targeting error/inadequate sampling during FBx. As a consequence, lower PIRADS 5 CDR likely impacted upgrading to high grade cancer by target (observed 17%, expected >20%). 4 MUSIC practices participated in proctoring, and 11 held multidisciplinary reviews of scorecards and discordant cases. Multidisciplinary review identified areas of improvement in MRI acquisition, interpretation, segmentation, co-registration during FBx, and targeting.

CONCLUSIONS: The MUSIC MR/FBx scorecard serves as a robust framework for quality assessment and improvement centered on radiographic/pathologic correlation and strategic partnerships amongst stakeholders. It allows practices to track outcomes, aids in identifying deficiencies, and provides opportunities for additional training to improve the quality of prostate MRI and FBx.

Source of Funding: Blue Cross Blue Shield of Michigan