

MUSIC OCTAVE – Composite Measures to Assess Surgeon Performance for Robotic Prostatectomy

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INTRODUCTION AND OBJECTIVES: The Michigan Urological Surgery Improvement Collaborative (MUSIC) collects patient-reported outcomes (PRO), peri-operative outcomes, and surgeon-level video assessments of technical skill as a means to facilitate quality improvement for prostate cancer patients in the state of Michigan. In this study, we defined composite measures that could be used to identify better performing surgeons across a variety of outcomes for robot-assisted radical prostatectomy (RARP).

METHODS: For the urethro-vesical anastomosis, an Outcomes, Competency, and Technical Assessment Video Evaluation (OCTAVE-Anas) score was created by combining PRO urinary function score changes at 3-months post-RARP, percentage of patients having a urethral catheter duration >16 days, percentage of patients readmitted, and blinded peer-review Global Evaluative Assessment of Robotic Skill (GEARS) scores of videos of the anastomosis technique. Similarly, for nerve sparing (NS), OCTAVE-NS score was created based on differences in erectile function at 6-months post-RARP, percentage of organ-confined patients with positive margin, and GEARS assessment of NS technique. All component measures were standardized to represent number of standard deviations better (positive values) or worse (negative values) than population averages, and the OCTAVE score was calculated as the sum of these standardized values.

RESULTS: From 4/2014 through 4/2016, 20 surgeons from 14 different practices (2,774 total patients) sent video clips of their surgical techniques and had at least 50% of their patients participating in MUSIC PRO. OCTAVE-Anas scores ranged from -6.4 to 3.5, while OCTAVE-NS scores ranged from -3.7 to 3.5. Construct validity was demonstrated with moderate correlation between OCTAVE and the video assessment scores (Anas $r=0.59$, NS $r=0.56$, Figure 1).

CONCLUSIONS: OCTAVE successfully incorporates multi-dimensional assessments to reliably determine better performing surgeons for the anastomosis and nerve-sparing aspects of RARP. This method may be used to identify surgeons to provide peer surgical skill quality improvement, with the aim to advance care for prostate cancer patients in the state of Michigan.

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Figure 1: Scatter plot of OCTAVE vs GEARS Video Assessment of Surgical Skill Evaluation – (a) Anastomosis, (b) Nerve-sparing

