

Evaluation of an uncomplicated recovery after nephrectomy: MUSIC-KIDNEY NOTES (Notable Outcomes and Trackable Events after Surgery)

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INTRODUCTION AND OBJECTIVE: Evaluation of surgeries are commonly performed with assessment of complication rates and/or other peri-operative outcomes to gauge success. Based on MUSIC's experience with Notable Outcomes and Trackable Events after Surgery (NOTES) after prostatectomy, we developed a tool to define an uncomplicated recovery after radical nephrectomy (RN) or PN. With quality improvement (QI) as the focus, we evaluated and compared these outcomes across practices to target areas for QI and better understand factors contributing to the deviations.

METHODS: We utilized a consensus approach to develop an uncomplicated recovery pathway comprising a set of objectively and reliably measured events to reflect the quality of PN/RN, and perioperative care. Specifically, prolonged length of stay (LOS>3 days after MIS, >5 days after open), prolonged warm ischemia time (WIT), extensive estimated blood loss (EBL>500 ml), positive surgical margin (PSM), or an 30-day ED visit/readmission were considered NOTES deviations. We evaluated patient and tumor factors associated with deviations as well as practice-level variation.

RESULTS: The study cohort consisted of 873 PN and 450 RN. Overall, 29.0% (190/655) of PN and 27.7% (109/394) of RN patients had at least one deviation (Fig 1a). In patients with PN, the overall number of deviations increased with increasing tumor size and complexity based on RENL score categories ($p<0.01$ for each). Additionally, T1b tumors, higher RENL score, and larger tumor size were associated with increased WIT ($p<0.001$); higher CCI comorbidity score was associated with increased LOS ($p<0.001$), and BMI<25 with readmissions ($p=0.032$). When looking at RN, higher RENL score ($p=0.032$) and T1a tumor ($p=0.010$) were associated with a higher LOS; male gender was associated with EBL>500 ml ($p=0.006$); and younger age with a higher rate of ED visits ($p=0.01$). Wide variation in deviations but no clear trend was noted across practices (Fig 1b&c).

CONCLUSIONS: MUSIC developed NOTES as a means to continually evaluate metrics thought to be helpful in monitoring the quality of nephrectomy in Michigan. Apart from better understanding treatment appropriateness, the observed variation in NOTES highlights variability in surgical practices and opportunities for QI.

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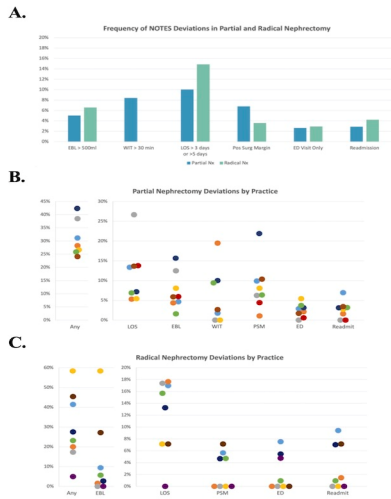


Figure 1 - Prevalence of KIDNEY-NOTES deviations in MUSIC overall (A), practice variation of deviation by practices in PN (B), and practice variation by practices in RN (C) with each colored dot representing a different practice