Trainee Information
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Proposal Information
Title: Transurethral Resection Urinary Retention Predictor (TURP) Score: A Novel Perioperative Predictor of Post-operative Urinary Retention
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RESEARCH NARRATIVE

Problem to be addressed: Transurethral resection of the prostate (TURP) is the gold standard surgical therapy for lower urinary tract symptoms secondary to benign prostatic hyperplasia (BPH) [Oelke et al., 2013]. While technical advances in electrosurgery have reduced the incidence of perioperative complications, postoperative hemorrhage requiring transfusion, bladder irrigation, reintervention, and/or prolonged hospital admission may occur in up to one-third of patients undergoing TURP (Trinh et al., 2013). Similarly, postoperative urinary retention following foley removal may occur in up to 16% of patients. Recently, TURP has been designated as an "extended recovery" procedure. While this designation allows for a streamlined discharge on postoperative day 1, potentially major complications requiring further hospitalization may arise. Recent large-scale observational studies have identified certain patient characteristics as potential predictors of postoperative morbidity (Bhojani et al., 2013). Creating a perioperative risk "scoring system" for patients undergoing TURP at BWH that accounts for such predictors may allow providers to identify patients more likely to experience perioperative complications, thereby ruling them inappropriate for "extended recovery" designation.


Study hypothesis: By developing and implementing a perioperative risk stratification "TURP" score, we will be able to reduce the number of extended recovery TURP patients that will ultimately require further hospitalization as a result of perioperative complications and/or urinary retention.
**Population:** All patients undergoing a bladder outlet procedure at BWH and BWH-Faulkner Hospital.

**Description of intervention or study design:** We will attempt to identify subgroups at risk for: 1) perioperative complications (eg postoperative hemorrhage) requiring prolonged hospitalization or 2) postoperative urinary retention requiring recatheterization. To achieve the aforementioned aims of this project, we will develop a preoperative scoring system to predict patients undergoing TURP that are at increased risk for either prolonged hospitalization or post-operative urinary retention. More specifically, we will use stepwise multivariate logistic regression analysis of patient data contained within the Research Patient Data Registry (RPDR) to identify predictors of either prolonged hospitalization or urinary retention following TURP. Additionally, we would employ parsimonious models by sequentially removing variables from the full model to reduce the number of predictors that can reasonably be used in a perioperative risk scoring system (eg. forward-selection procedure). Ultimately, we hope to validate our model by constructing a receiver operating characteristic curve based on the sensitivity and specificity of the predictors identified in our logistic regression on a similar but different dataset (eg patient data from 2010 vs. 2011). Patients meeting high-risk criteria in the first model would not be eligible for "extended recovery" designation, while high-risk criteria for the second model would forego PACU void trial and follow-up in clinic at a later date for foley removal.

**Description of comparison group (if relevant):** Not applicable.

**Outcome variable to be used to determine the efficacy of the intervention (if relevant):** The primary outcome of our study will be the number of extended recovery TURP patients that ultimately require further hospitalization as a result of perioperative complications both before and after implementation of our "TURP" score. A secondary outcome will be the number of postoperative urinary retention episodes requiring recatheterization both before and after implementation of our "TURP" scoring system.

**Power analysis to determine feasibility (when relevant):** Not applicable.


**IRB status of project:** The protocol will be submitted for IRB.

**BUDGET**

**Line item budget and budget narrative:** $2500-$3500 for data collection/analysis (eg programming costs) $1500--> creation/implementation of "post-TURP" risk stratification scoring system Cost will be dominated by programming requirements, including but not limited to data extraction from the Research Patient Data Registry (RPDR) to identify predictors that will eventually be used in our scoring system, validation of our scoring system, and then finally collection and analysis of our pre/post intervention data.

**Disclosure of other funding sources. (Will receipt of this grant augment or replace other funding sources for your research?)** This grant would be sole source of funding.

**OTHER**

**Previous COE involvement to date:** I have attended 2 separate dinner sessions, namely in the form of the Resident Quality Improvement Council forums.

**Previous COE funding:** not applicable