

ENGAGE WITH QUALITY IMPROVEMENT AND PATIENT SAFETY (E-QIPS)

Reducing Preventable Emergency Department Visits in Benign Prostate Surgery through Implementation of Self-Irrigation of Catheters: Using the Model for Improvement as a Framework to Learn

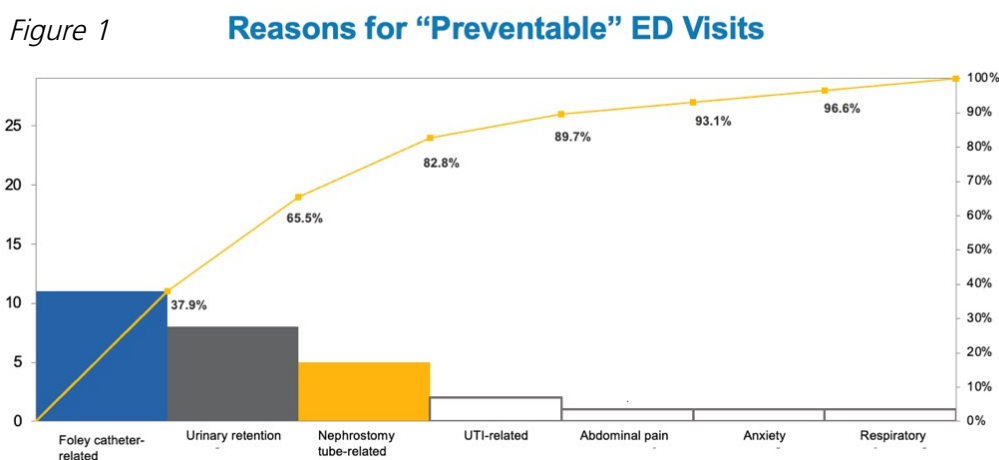
Anthony Bettencourt, BSN, Christopher Saigal, MD, MPH, and Kathy Huen, MD, MPH



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QUALITY OR SAFETY PROBLEM

Getting a patient to the “right care, at the right time, in a right place,” facilitates both optimal patient care and health system flow.¹ Besides the clinic, the emergency department (ED) is often the place post-operative urologic surgery patients turn to when complications arise. Through prior analysis of our data in this patient population, we believe that a large proportion of these ED visits may be preventable. We defined a “preventable” ED visit as one that meets four parameters: it is within 90 days after urologic surgery, no imaging was attained, no urology consult was placed, and the patient was discharged to home. Based on this definition, and using statistical process control charts, we found that nearly 23% of ED visits during the calendar year of 2022 were preventable. In further analysis using rational subgrouping, we identified that a plurality of these visits, nearly 35%, occurred outside standard operating hours of most urology and immediate care clinics. The most common reason for these ED visits overall was related to foley catheter malfunction, as shown in the Pareto Chart (Fig 1.). Based on this data, we have identified urinary catheter malfunctions as significant drivers of ED visits.

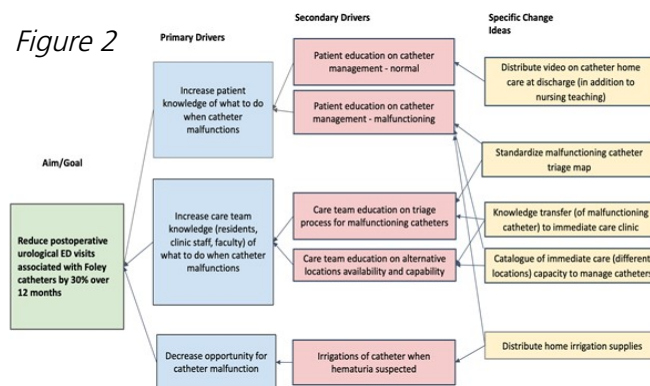


BACKGROUND

While readmission rates for urologic procedures have been studied extensively, the same cannot be said regarding the incidence of ED admission without subsequent hospital readmission. In a study evaluating the frequency of return ED visits after Transurethral Resection of the Prostate (TURP), it was shown that at 30, 60 and 90 post-operatively the incidence of ED visits was 21.4%, 26%, and 28.6% respectively.² The results of this study are similar to our analysis of the incidence of return ED visits at our institution. No currently available study has sought to evaluate the potential for reducing ED visits related to catheter malfunction. Using the Institute for Healthcare Improvement (IHI) Model for Improvement as a framework,³ we have developed a driver diagram to link our theories with actionable change ideas (Figure 2). An iterative process with the Plan-Do-Study-Act (PDSA) cycle as a guide, this model can accelerate improvement and lead to meaningful change.

PROJECT OBJECTIVES

Our objective is to reduce preventable emergency department (ED) visits related to foley catheters by 30% over 12 months in patients who have undergone benign prostate surgery. Based on our driver diagram (Fig. 2), our hypotheses are: 1) Providing discharge education on catheter self-irrigation will reduce the incidence of preventable ED visits related to foley catheter malfunctions and 2) providing discharge education on catheter self-irrigation will improve the patient experience. To test these hypotheses, we propose the following specific aims:



Specific Aim 1: Provide discharge education regarding home foley catheter irrigation to postoperative urologic surgery patients who have undergone benign prostate surgery.

Specific Aim 2: Evaluate the utility of home catheter irrigation in postoperative urologic surgery patients who have undergone benign prostate surgery.

Specific Aim 3: Elicit qualitative feedback from interdisciplinary colleagues and patients utilizing semi-structured interviews.

INTERVENTION

Our intervention will entail a protocol of self-catheter irrigation in postoperative benign prostate surgery patients who have failed their void trial with subsequent catheter replacement. Discharge education will be provided by nursing staff with subsequent return demonstration by the patient or their caregiver. We will create nursing protocols on catheter irrigation discharge education as well as providing QR codes to patients with videos and written materials to access at home.

MEASURES OF SUCCESS

We plan to evaluate if a change results in an improvement with a combination of process and outcome measures, detailed below. Additionally, we seek to elicit qualitative feedback from nursing and patients for continued learning and improvement as we move forward with iterative PDSA cycles with testing in different conditions. Process measures will include the following: 1) consistency of nursing teaching of self-irrigation in eligible patients; 2) frequency of patients who performed self-irrigation who were taught self-irrigation by nursing, among patients who presented to the ED for catheter malfunction. We also plan to contact patients who were taught self-catheter irrigation, regardless of ED admission, for semi-structured interviews about their experience and to quantify the patients who attempted irrigation, for initial PDSA cycles. Outcome measures will include the following: 1) time between ED events in patients who underwent catheter teaching. In collaboration with Performance Strategy and Analysis teams, we are developing a dashboard with a P and T chart embedded to allow for real-time tracking for improvement; 2) frequency of calls to the after-hours urology triage page line related to catheter problems. After small tests of changes with PDSA cycles, it is our aim to move towards implementation and spread, with an expansion of eligible patients to receive self-irrigation teaching.

OUTCOMES

We expect the incidence of “preventable” ED visits postoperatively after benign prostate surgery related to foley catheters to decrease as demonstrated by an increase in the time between such visits noted in our T-chart (this Shewart chart is useful for learning from data on uncommon events). Balancing measures to evaluate potential unintended consequences will include the number of patients who experienced adverse events related to self-irrigation protocol, such as clinically significant anemia from hematuria because of a delay in seeking care.

POTENTIAL IMPACT AND SCALABILITY

This intervention will change the discharge process and nursing protocols related to discharge as they pertain to benign prostate surgeries. If our implementation is successful, we plan to scale up and spread the intervention to other urologic patients with catheters where hematuria is a concern, then to inpatient processes. Future directions on a regional and national level include developing a toolkit for implementation in other health systems.

SUSTAINING THE CHANGES

Through iterative PDSA cycles, we plan to test changes in different conditions with different staff and solicit feedback on our irrigation protocol. We will also ensure that the necessary equipment, such as irrigation supplies are readily available, and plan to standardize how nurses are reminded (during their weekly team huddle) to teach self-irrigation. By engaging with our data analytics team for building a dashboard on our process and outcome measures, we are able to perform real-time monitoring and respond to changes in process or outcomes.

RERERENCES

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3. How to improve: Model for improvement. Institute for Healthcare Improvement. Accessed June 13, 2024. <https://www.ihl.org/resources/how-to-improve>.

PROJECT LEAD CONTACT INFORMATION

Anthony Bettencourt, BSN

David Geffen School of Medicine at UCLA

abettencourt@mednet.ucla.edu