

Quality Improvement Issue Brief – Readmissions in Urology: An Overview of Evidence-Driven Approaches to Guide Quality Improvement Efforts

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Introduction: The Quality Mandate

Unplanned acute care after surgery, including emergency department (ED) visits, observation stays, and hospital readmissions, is an important marker of the safety, continuity, and effectiveness of the transition from hospital to home. These events often reflect fragmented care, lead to wasteful spending and serve as a marker of healthcare quality. Gaps in care that arise from these unplanned visits lead to significant patient morbidity, including increased risk of mortality, delayed adjuvant therapies, eroded trust in the medical system, and increased burden on caregivers. [1-4]

Given the substantial patient, policy and economic implications, readmissions have long been a focus of payers and public reporting. The Centers for Medicare & Medicaid Services (CMS) Hospital Readmissions Reduction Program (HRRP) penalizes hospitals with excess readmissions after selected medical conditions and surgical procedures, and episode-based payment models hold hospitals accountable for spending, including readmissions, for up to 90 days after surgery.[5] Early results from the HRRP were promising, reducing absolute 30-day readmission rates among targeted medical conditions, however, subsequent studies have shown reductions were largely limited to targeted conditions and procedures and attributable to greater use of observation stays and changes in coding, instead of meaningful changes in patient care.[6,7] While no current federal readmission program specifically targets urologic care, CMS set a strategic target to have 100% of traditional Medicare and the majority of Medicaid beneficiaries enrolled in accountable, value-based care relationships by 2030, making broader application to medical and surgical specialties increasingly likely.[8] Beyond payers, nationally recognized organizations, such as Vizient and U.S. News & World Report (USNWR), define top-performing medical centers through benchmark comparative rankings with a significant component of this coming from readmissions.

While many prior readmission reductions efforts exist, most have had limited success, are narrow in scope, or are difficult to scale.[9] Urologists across all practice settings are uniquely positioned to lead efforts focused on reducing unplanned readmissions and revisits given the longitudinal nature of our patient-provider relationship. This Quality Improvement Issue Brief (QIIB) summarizes the scope of unplanned care after urologic surgery and offers practical, evidence-based guidance for measuring the problem, identifying local drivers, and implementing interventions, consistent with the [AUA Quality Improvement Project Guide](#).

Statement of the Quality Problem

Readmission rates and the underlying reasons for readmissions vary widely across urologic procedures (Table 1). Any readmission reduction efforts require a granular understanding of these parameters to inform quality improvement efforts and track intervention outcomes. As a result, consistent definitions and accurate measurement are integral.

Key definitions:

- **Unplanned visit (revisit):** ED or urgent care visit, or observation stay, that does not result in inpatient admission.
- **Readmission:** unplanned inpatient admission after discharge from a surgical hospitalization.
- **Time window:** 30-day measures capture events most closely tied to the procedure and are most actionable for clinicians; 90-day measures are favored by insurers and policy makers as they align with episode-based payment models.

Table 1. Incidence and common drivers of readmissions following select urologic procedures

Urologic Procedure	30-Day Readmission Rate (%)	Common Primary Drivers
Radical cystectomy	16% – 25%	Urinary tract infection, Dehydration, Renal dysfunction, Ileus, SSI[1,10-12]
Partial and Radical Nephrectomy (RN)	4% – 8%	Wound issues, Ileus, Bleeding/Hematoma [12,13]
Radical prostatectomy	4%	Ileus, wound issues, Venous thromboembolism [12]
Transurethral resection of bladder tumor (TURBT)	4%	Hematuria, Retention [14]
Bladder Outlet Obstruction Procedures (TURP/HoLEP)	4% – 8%	Hematuria, UTI, Retention [15,16]
Stone Procedures (URS/SWL)	2% – 4%	Pain, UTI, Sepsis [17-19]

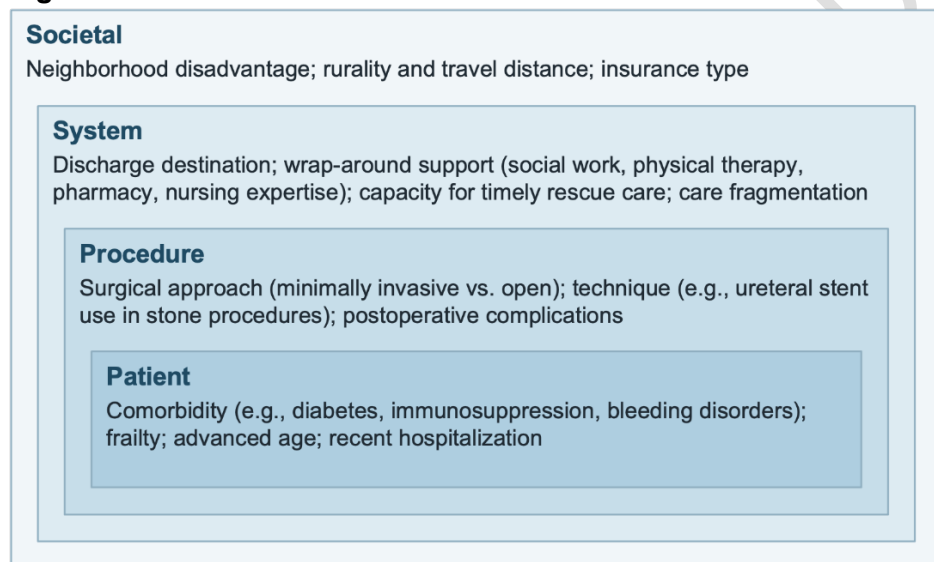
Understanding the context in which these revisits and readmissions occur is necessary to both identify where gaps in care exist and the opportunities for improvements. For example, cystectomy carries the highest readmission burden with one in four patients readmitted within 30 days and 40% within 90 days, rates that have remained unchanged despite myriad structured efforts aimed at improving this outcome.[10,11] After endoscopic procedures, ED visits are more common than readmission with roughly 10% ED revisit within 30 days of ureteroscopy, most often for stent-related pain, hematuria, or infection.[17-19]

Beyond the traditional complications outlined in Table 1, unplanned hospital visits can also place a substantial burden on patients and their families, with physical, psychological, social, and financial consequences. One study describes the “trauma of hospitalization,” highlighting how hospitalization itself can contribute to anxiety, sleep deprivation, and physical deconditioning—effects that may be compounded by a subsequent readmission.[20] Patients and families may also experience lost wages, mounting medical expenses, and other financial hardships associated with time away from home and work.[21] The burden of readmission is particularly significant for patients with limited social and community support, potentially exacerbating existing disparities among vulnerable populations.[22] These effects extend beyond the patient. Caregivers and family of readmitted patients may need to provide care for longer periods, take additional time away from work, and experience increased stress that can affect both their own well-being and their relationship with the patient.[4] A variety of data sources can be leveraged to measure readmissions and revisits, each with unique strengths and limitations.[23,24] Administrative claims (Medicare, Medicaid, MarketScan, etc.) capture large populations and readmissions to any hospital but lack clinical detail such as laboratory, imaging, and pathology results. Clinical registries such as NSQIP and the AQUA Registry add clinical granularity but cover only a subset of urologic procedures and may not capture ED visits. Regional collaboratives such as the Michigan Urological

Surgery Improvement Collaborative (MUSIC) combine clinical detail with multi-institutional scale, however these rely on complex data abstraction that is not reproducible in most settings. While institutional databases offer the most flexibility in terms of data collection, they typically contain smaller numbers of patients and miss care delivered at outside hospitals, which can be as high as 1 in 3 readmitted patients after urologic cancer surgery.[25] Those engaging in readmission QI work should choose, and when possible combine, sources that best align with the purpose of the project.

At their core, readmission reduction QI efforts require the presence of modifiable factors that can be leveraged to improve outcomes. Potential factors associated with readmission can be categorized into four broad categories: i) patient, ii) procedure, iii) system and iv) societal (Figure 1).[15,19, 26-31] Understanding factors within these categories and the interplay between them is critical when constructing readmission reduction interventions. While high-quality readmission data are necessary to identify these factors, a true determination of preventable factors relies heavily on an in-depth understanding of procedure specific risks, patterns of complications and potential alternatives. For example, unplanned visits after bladder outlet obstruction procedures are frequently related to catheter issues, which may be preventable with improved patient education. In contrast, most readmissions following cystectomy appear to not be preventable and reflect necessary care of a complication, so reduction efforts should focus on minimizing the severity of those complications or burden on patients and caregivers. It is therefore imperative that clinicians actively participate in readmission focused QI projects. Without this input, the chances of meaningful improvements are slim.

Figure 1. Factors associated with readmission and revisits.



Discussion and Recommendations

Define the event and select measures before choosing data sources or interventions.

Effective readmission reduction work begins with a measurement plan that clearly defines the population, numerator and denominator, exclusions, follow-up window, data source, and stratification variables before collecting data, and distinguish readmissions from ED visits and observation stays, which may reflect different gaps in care. Outcome measures should be paired with process measures that assess whether the planned intervention was delivered, balancing measures that identify unintended consequences, and structural measures that determine whether the required staff, access, and infrastructure are available. Results should be tracked over time with run or control charts, stratified by procedure and patient risk, rather than relying on a single before-and-after comparison.

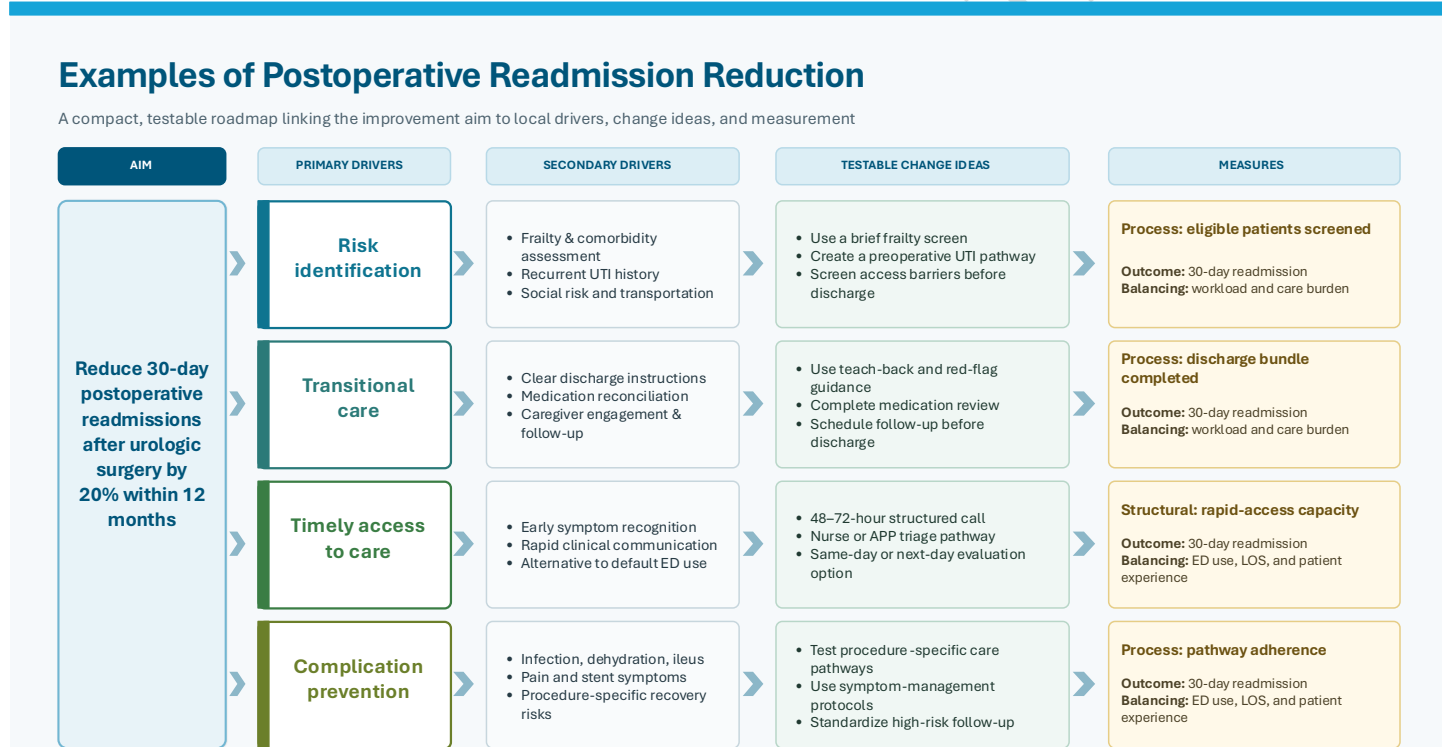
Find out why patients return, not just whether they return by using the right data source.

Capturing a revisit or readmission as a binary outcome can identify at-risk populations but is rarely actionable

without knowing *why* the visit occurred. A targeted chart review, clinician adjudication, or patient follow-up may be needed to identify preventable drivers and design a local interventions. The MUSIC Reducing Operative Complications from Kidney Stones (ROCKS) initiative exemplifies this approach by capturing granular data on the drivers of postoperative emergency department visits and readmissions after ureteroscopy leading to a multicomponent intervention consisting of patient stent education pamphlet and video, a pain management pathway, and surgeon-level performance reports.[19,32] As a result, ED visits after ureteroscopy in Michigan fell from 10.5% in 2016 to 6.9% in 2021, and led to the development of an ongoing pragmatic randomized trial evaluating stent omission.[33]

Use structured QI tools to identify and prioritize local drivers. Consistent with the AUA Quality Improvement Project Guide, process maps of the discharge-to-follow-up pathway, fishbone diagrams, and Pareto charts can identify the few causes that account for most local readmissions. These findings can then be organized into a driver diagram that links the project aim to primary and secondary drivers—informed by clinical factors outlined in Figure 1—change ideas, and measures (Figure 2). Priority targets are common, clinically meaningful, and linked to a care process the team can change. Risk identification is useful only when it is tied to an action, such as enhanced preparation, earlier follow-up, or a defined escalation pathway.[28]

Figure 2. Example driver diagram for reducing 30-day readmissions after urologic surgery.



Make timely access to knowledgeable care a core part of the plan. Even appropriately selected and well-prepared patients may default to the emergency department when no credible outpatient alternative exists.[34] In a single-center urology quality improvement project, structured telephone follow-up 48 to 72 hours after discharge reduced reattendance by 13% and improved patient satisfaction.[35] The addition of a direct contact line to the primary surgeon as part of a community hospital Enhanced Recovery After Surgery (ERAS) protocol resulted in 90-day readmissions falling from 4.84% to 3.1% and 7-day ED visits from 6.45% to 3.88% [36] The goal may not be to prevent necessary readmissions, but to recognize emerging problems early and manage them at the appropriate level of care.

Test multicomponent bundles linked to the identified drivers. Single interventions, such as educational materials or a phone call alone, rarely produce sustained improvement. Interventions that address more elements of the care transition are more consistently associated with fewer readmissions.[37,38] Bundles

typically combine risk identification, procedure-specific preparation with teach-back, reliable care transitions (medication reconciliation and follow-up scheduled before discharge), early post discharge contact with rapid access, procedure-specific recovery pathways, and EHR tools such as discharge checklists and automated follow-up tasks (Figure 2). Each component should be tied to a driver, assigned an owner, and paired with a process measure. Start with small Plan-Do-Study-Act cycles in a single procedure or clinical setting, monitor staff burden and other unintended consequences, and spread the components that work.

Conclusion. Unplanned care after urologic surgery is common, costly, and burdensome for patients and caregivers, and it is likely to face growing scrutiny from payers and hospital rankings. Urologists are well positioned to lead quality improvement efforts by measuring the right events, understanding why patients return, and testing multicomponent, locally tailored interventions that emphasize timely access to knowledgeable care.

Summary Statements

1. Unplanned visits and readmissions after urologic surgery are common, costly, and represent a substantial burden on patients and caregivers. They therefore represent a high-yield area for quality improvement efforts.
2. To improve the caliber of QI efforts, clinicians should understand the implications of how unplanned visits and readmissions are measured, the data sources available for these measurements, and which contributing factors may be modifiable.
3. QI efforts that employ data-driven, structured approaches to readmission reduction are most likely to result in meaningful, durable changes.

Additional Resources

[AUA Quality Improvement Project Guide](#)

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