Exploring Urological Surgery Wait Times as a Quality Indicator of Care: A Case Study of Different Health Care Systems

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Abstract

Introduction: We determined and compared wait times for urological procedures at 2 centers in different health care systems to more fully understand the usefulness of wait times as a quality indicator.

Methods: A retrospective review of patient wait times for transurethral bladder tumor resection was performed at Albany Medical Center, Albany, New York and Kingston General Hospital, Kingston, Ontario, Canada. The time from the decision for surgery until the completion of surgery (Wait 2) was determined for 495 consecutive patients during calendar years 2011 and 2012. Patient, surgeon and tumor factors that could potentially affect wait times were collected, as were wait times from referral to initial consultation (Wait 1) for new patients. These findings were contrasted with the wait times for 375 patients who underwent transurethral prostate resection.

Results: Median Wait 2 time for transurethral bladder tumor resection was statistically but not clinically different at 24 days at Albany Medical Center and at 35 days at Kingston General Hospital. High grade and stage were associated with shorter wait times at Albany Medical Center but not at Kingston General Hospital. Median Wait 1 time was different at Albany Medical Center (13 days) vs Kingston General Hospital (25 days), significantly adding to the total wait. For transurethral prostate resection the Wait 2 times were more disparate at 29 and 58 days at Albany Medical Center and Kingston General Hospital, respectively.

Conclusions: The use of wait time as a measure of surgical quality of care is complex. These results suggest that measuring a summary wait time (Wait 2) may not identify the structural and process issues that affect care delivery.

Key Words: urinary bladder neoplasms, prostatic hyperplasia, transurethral resection of prostate, time factors, time-to-treatment

Abbreviations and Acronyms

AMC = Albany Medical Center

ASA® = American Society of Anesthesiologists

KGH = Kingston General Hospital

TURBT = transurethral bladder tumor resection

TURP = transurethral prostate resection

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The ongoing conversation about health care value (costs relative to outcomes) has redoubled interest in the measurement and reporting of quality metrics. The most commonly applied platform of quality measurement is based on the principles of Donabedian, who perceived quality of care as the interaction of the 3 key elements of structure, process and outcome.[1] This framework suggests that excellent structures of health delivery lead to improved processes of care and subsequently to optimal surgical outcomes. Surgical wait time has become a visible and contentious quality of care indicator as it is a complex proxy for structure and process related factors.[2,3] Although there have been ambivalent reports on the association of prolonged wait times for urological procedures and inferior patient outcomes,[4-7] there are also negative implications due to the psychological as well as the socioeconomic burdens of prolonged waiting.[8]

Most reporting of surgical wait times generally involves only a few index surgical cases and only a single period (most often from the decision to operate to the completion of the operation).[9,10] However, this limited definition only accounts for a fraction of the actual wait time experienced by the patient and may not be sufficient to improve surgical care delivery.[2,11] Several groups have suggested that measuring a higher resolution wait time, incorporating the time from first referral to a specialist (Wait 1), time for diagnostic evaluation and, finally, time from the decision to operate to procedure completion (Wait 2), has more utility.[2,11-13] Wait times can be a surrogate for many structure and process related factors in the delivery of surgical care, such as cancellation rates, but are also confounded by case mix and patient factors. The measurement and reporting of lower resolution, summary wait times risk failing to identify important barriers to improvement.[14]

Mandatory reporting of surgical wait times has been used in several publicly funded systems such as those in Canada and United Kingdom.[3,14,15] Much less has been published on wait times in the U.S. with its mostly privately funded health care system. Although there have been only a few dated comparisons of surgical wait times in differently funded systems,[16] it is a commonly held belief that universal health care systems are more likely to have prolonged waits. We undertook a case study of high resolution wait times for an index urological procedure, TURBT, at a U.S. vs a Canadian center, investigating factors associated with prolonged waits and contrasting these results to those for a nononcologic procedure, TURP.

Patients and Methods

We compared high resolution wait times and factors that might affect these times at AMC in Albany, New York, a privately funded academic institution in the United States, with those from KGH in Kingston, Ontario, a similar size, publicly funded academic institution in Canada. Although the funding structure for KGH is similar to that of all public hospitals in Ontario, surgeons at this center participate in a unique alternative funding plan that delivers global funding to involved specialties, including urology, which are then required to report deliverables including shadow billing penetration. The centers are clearly different in many ways. For example, at KGH attending physicians triage referrals, whereas at AMC this is generally done by secretaries. However, both centers have defined operating room resources with high levels of use and very little open operating room time. Both institutions act as tertiary care centers for urological procedures for their respective regions.

In this study we chose to compare wait times for TURBT as an important index urologic oncology procedure. TURBT is a common, relatively low risk and brief procedure, with little requirement for multidisciplinary consultation or extensive imaging. Measuring wait times for bladder cancer care has good face validity for a quality indicator because prolonged wait times for bladder cancer care have been reported to be associated with inferior outcomes.[17-19] Finally, although several oncologic procedures are measured and, therefore, prioritized in Ontario, TURBT is not included as a routinely reported index case.

We performed a retrospective chart review of 495 consecutive TURBT cases at the 2 centers (AMC 253, KGH 242) during calendar years 2011 and 2012. The only cases excluded from analysis were those operated on urgently for bleeding. Wait 2 data at KGH were collected by a real-time prospective and digitized booking system for all surgical cases as previously described.[11] However, further chart review was performed for a higher resolution analysis of wait times. Specifically we examined dates of referral, initial urological consultation, decision for surgery and completion of surgery. Wait 1 was delineated as the time from referral to urological consultation and Wait 2 was defined as the time from the decision for surgery to the completion of surgery. To identify potential process, tumor or patient related causes of prolonged wait times, we recorded patient age, gender, type of insurance, new vs established patient, cancellation rates, ASA® score, specific surgeon and final tissue pathology. Finally, to contrast wait times for this fundamental urological oncology procedure with those of a similar, low intensity surgery for benign disease, we documented TURP wait times at the 2 centers. During the same period Wait 2 data for 375 consecutive TURP cases (AMC 156, KGH 219) were recorded for elective and urinary retention cases.

Minitab® (v17) was used to analyze the data. Data are presented as median and IQR (25th to 75th percentile).