Use of Routine Home Health Care and Deviations From an Uncomplicated Recovery Pathway After Radical Prostatectomy

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OBJECTIVE To evaluate the statistical association between routine home health use after prostatectomy, short-term surgical outcomes, and payments.

METHODS We identified all men who underwent a robotic radical prostatectomy from April 1, 2014, to October 31, 2015, in the Michigan Urological Surgery Improvement Collaborative (MUSIC) with insurance from Medicare or a large commercial payer. We calculated rates of "routine" home care use after prostatectomy by urology practice. We defined "routine" home care as home care initiated within 4 days of discharge among patients discharged without a pelvic drain. We then compared emergency department (ED) visits, readmissions, prolonged catheter use, catheter reinsertion rates, and 90-day episode payments, in unadjusted and using a propensity-adjusted analysis, for those who did and did not receive home care.

RESULTS We identified 647 patients, of whom 13% received routine home health care. At the practice level, the use of routine home care after prostatectomy varied from 0% to 53% (P = .05) (mean: 3.6%, median: 0%). Unadjusted, patients with routine home care had increased ED visits within 16 days (15.5% vs 6.9%, P <.01), similar rates of catheter duration for >16 days (3.6% vs 3.0%, P = .79) and need for catheter replacement (1.2% vs 2.5%, P = .46), and a trend toward decreased readmissions (0% vs 4.1%, P = .06). Only the increased ED visits remained significant in adjusted analyses (P <.01). Home health had an average payment of $1000 per episode.

CONCLUSION Thirteen percent of patients received routine home health care after prostatectomy, without improved outcomes. These findings suggest that patients do not routinely require home health care to improve short-term outcomes following radical prostatectomy, however, the appropriate use of home health care should be evaluated further. UROLOGY ■■: ■■–■■, 2017. © 2017 Elsevier Inc.

Medicare and commercial payers are transitioning from paying for quantity of services to paying for the value of care, which includes costs and quality. Variation exists in the costs and quality of many conditions, including total episode costs for radical prostatectomy (RP).[1,2] The predominant drivers of the variation in 90-day episode costs after RP are readmissions (related to complications), professional payments, and postacute care, which all contribute almost equally to the variation.[2]

Although we know the broad categories where variation exists, a better understanding of how specific physician practice patterns impact both short-term outcomes and payments is critical to improving outcomes and decreasing costs. After a RP, some patients are discharged with home health care for routine postoperative care. This

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"routine" use of home health care is in contrast with patients who receive catheter teaching in the hospital and are only discharged with home health care for the treatment of specific patient-related concern or complication that has occurred during the hospital admission (eg, a wound infection requiring packing).

"Routine" home health care is frequently prescribed to decrease patient and caregiver anxiety related to the urinary catheter and to prevent catheter-related issues that would otherwise result in emergency department (ED) visits or readmission. However, clinical and cost outcomes following the use of "routine" home health care have not been evaluated previously, and the "routine" use of home health care is a potential source of practice pattern variation. Home health care could prevent catheter-related complications, resulting in lower ED visits and readmissions. One would expect to see decreased ED visits and readmissions secondary to routine home health use during the time the catheter was in place. In contrast, routine home health may be unnecessary and associated with equivocal or even worse outcomes. An evaluation of the use of home health care after pancreatectomy demonstrated increased 30-day readmissions when patients were discharged home with home health compared with no home care, even after adjusting for the propensity to receive home health.[3] In another analysis of all postacute care discharges for patients ≥18 years of age from a health system, using propensity score matching, the authors found that patients discharged with home health had an increased risk of readmission compared with those discharged home.[4]

In this context, we aimed to evaluate routine home health care after RP. Specifically, we assess variation in the use of routine home health care and if its use is associated with catheter-related complications, frequency of ED visits, and readmissions. We evaluate ED visits and readmissions during the postoperative period when routine home care visits are occurring and the urinary catheter is likely in place. The availability of such data would clarify the value of routine home health care after prostatectomy and guide clinicians about its use.

METHODS

Data Sources

Data for this analysis were collected through the Michigan Urological Surgery Improvement Collaborative (MUSIC) and the Michigan Value Collaborative (MVC).

Michigan Urological Surgery Improvement Collaborative (MUSIC). MUSIC is a physician-led collaborative established in 2012 with the goal of improving the quality and decreasing the costs of care associated with prostate cancer management. Currently, about 90% of urologists in Michigan at 43 sites participate in the program and share knowledge and experience in managing and treating prostate cancer. A cornerstone of the collaborative is that each site has a trained data abstractor that collects detailed and standardized clinical information on each prostatectomy, including patient characteristics, pathology, and 30-day postoperative outcomes, including the duration of use of pelvic drains. Each site's data are collectively available for analysis and quality improvement activities.

As part of MUSIC's efforts to improve short-term recovery after RP, the Notable Outcomes and Trackable Events after Surgery (NOTES) criteria were previously established and validated.[5] The criteria define an uncomplicated early recovery pathway following RP. We use 2 NOTES benchmarks for our outcome analyses (catheter placement 16 days or less and no 30-day catheter replacement), 2 benchmarks for our inclusion criteria (drain placement less than or equal to 2 days and no 30-day mortality), and 1 benchmark for a sensitivity analysis (length of stay 2 days or less).

Michigan Value Collaborative (MVC). MVC is a quality improvement collaborative funded by the Blue Cross Blue Shield of Michigan (BCBSM) that aims to improve healthcare quality and decrease costs. Part of the collaborative involves maintaining a claims-based registry that provides detailed information on episodes of care for over 25 medical and surgical conditions.[6] Services are identified and categorized in 4 component categories: the index admission, readmissions, professional services, and postacute care services. Postacute care services include home health care, ED visits, skilled nursing faculty, rehabilitation services, and other outpatient postdischarge care. The 4 component categories are summed to create 90-day total episode payments, and all payments are price standardized using the Michigan Medicare fee schedule to allow for comparisons across institutions. Both BCBSM preferred provider organization and Medicare fee-for-service claims are included in the database. Using claims allows identification of all services utilized during an episode, including ED visits and readmissions, regardless of the site of these services.

Study Population

Our study population included all men who underwent a robotic RP in the MUSIC who also had claims in the MVC. We matched cases in the 2 datasets using birth date, surgery date, and insurance type. In claims data, RP index hospitalizations were identified by an International Classification of Diseases, Ninth Revision (ICD-9) diagnosis code of 185 and either a professional claim with one of the following Current Procedural Terminology codes: 55810, 55812, 55815, 55840, 55842, 55845, or 55866, or a facility claim with an ICD-9 procedure code of 60.5 or 60.6x. We excluded claims with ICD-9 procedure codes of suprapubic prostatectomy, benign retropubic prostatectomy, cystectomy, or pelvic exenteration. These methods to identify claims in prostatectomy claims in MVC data have been used previously.[2] We additionally excluded patients who died within 30 days of surgery, patients who had an index hospitalization longer than 30 days, and patients