VARIABILITY IN MEDICARE UTILIZATION AND PAYMENT AMONG UROLOGISTS

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Background

•The Centers for Medicare and Medicaid Services (CMS) released the Medicare Provider Utilization and Payment Data: Physician and Other Supplier Public Use File (PUF) in April 2014, detailing information on services and procedures provided to Medicare beneficiaries by physicians and other healthcare professionals
•PUF granted the public, media, and academia unprecedented access to information regarding Medicare payments to individual providers
•Data do not account for providers who administer expensive medications, treat more complicated patients, or those whose individual billing totals represent the reimbursement of an entire provider group
•Medicare paid more than 880,000 distinct healthcare providers $77 billion in 2012 alone
•Urology is a rapidly changing area of medicine that increasingly utilizes technology-driven services
•Using the PUF, we aimed to determine the extent of variability in Medicare utilization and payment among urologists
•We also estimated the potential cost savings that would result from eliminating utilization of services well above the median

Methods

DATA SET

•Medicare Provider Utilization and Payment Data: Physician and Other Supplier PUF obtained from www.CMS.gov
•PUF includes submitted charges organized by National Provider Identifier (NPI), Healthcare Common Procedure Coding System (HCPCS) code, and place of service
•PUF does NOT include indications (beneficiaries' clinical characteristics) for the listed services and procedures
•Limited analyses to the 8.792 urologists who received Medicare payment in 2012 (1% of all Medicare providers)
•Number of patient visits totaled for each urologist

Methods (cont'd)

REGRESSION MODEL

•Linear regression used to correlate the total number of patient visits with total Medicare payments to each physician
•Resulting model used to generate a predicted Medicare payment for each urologist based on the number of patient visits
•Urologists' actual payments compared to predicted payments and ranked by amount of "excess" payment above predicted
•Urologists in highest and lowest quartile of actual payments in excess of predicted payments identified and compared

COMPARISON OF HIGHEST AND LOWEST QUARTILES

•Identified 40 common services with the highest total payments by the gross reimbursement amount
•Ratio of the number of services per patient visit for the highest quartile of urologists relative to the lowest quartile of urologists was calculated as a relative risk using negative binomial regression models

POTENTIAL COST SAVINGS

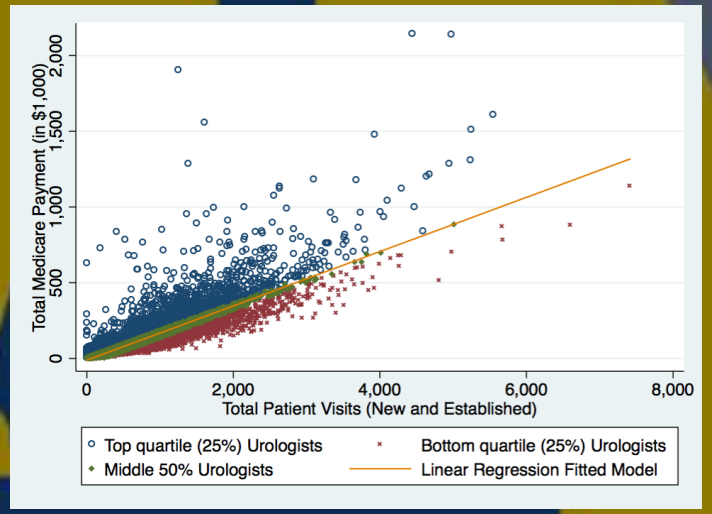
•"Overutilization" defined as more than 1.5 x median number of services per patient visit
•For each service (e.g., cystourethroscopy:
•Potential savings = (A - [B x C] x 1.5) X D
  A is total number of cystourethroscopies performed by urologist
  B is median number of cystourethroscopies performed per patient visit for all urologists (0.114)
  C is total number of patient visits for the urologist
  D is median Medicare payment amount for cystourethroscopy for the urologist
•Potential cost savings for this procedure were the aggregate of cost savings for all urologists who utilized this procedure at a rate > 1.5 x median
•Overall potential Medicare cost savings were calculated by adding the potential cost savings from the standardized utilization of all forty services

Results

HCPCS code	Description	Relative Risk (95% CI), p-value	Potential Medicare Cost Savings ($)
J9217	Leuprolide acetate suspension	1.59 (1.58-1.60), <.0001	15,531,865.30
52000	Cystoscopy	1.41 (1.40-1.42), <.0001	7,475,292.43
51798	Ultrasound urine capacity measurement	1.47 (1.46-1.47), <.0001	6,212,563.42
55700	Biopsy of prostate	1.54 (1.52-1.57), <.0001	1,858,634.60
84153	Assay of total PSA	1.29 (1.29-1.30), <.0001	1,952,074.76
76942	Ultrasound-guided biopsy	1.63 (1.60-1.65), <.0001	1,846,655.67
76872	Transrectal ultrasound	2.29 (2.26-2.32), <.0001	4,260,536.98
52601	Transurethral resection of prostate	1.40 (1.36-1.44), <.0001	1,602,742.48
99223	Initial hospital care	2.19 (2.15-2.23), <.0001	4,383,947.39
52281	Cystoscopy and treatment (dilation)	1.87 (1.84-1.91), <.0001	5,585,914.48
50590	Fragmenting of kidney stone	1.53 (1.49-1.58), <.0001	1,693,659.81
99232	Subsequent hospital care	2.27 (2.24-2.29), <.0001	5,909,891.31
99222	Initial hospital care	1.76 (1.74-1.79), <.0001	3,340,400.46
52224	Cystoscopy and treatment (fulguration)	2.14 (2.07-2.21), <.0001	4,955,620.40
53850	Prostatic microwave thermotherapy	2.78 (2.49-3.10), <.0001	3,110,866.20
51728	Cystometrogram with voiding pressure studies	2.14 (2.10-2.19), <.0001	3,389,095.28
88305	Tissue exam by pathologist	2.34 (2.31-2.38), <.0001	2,255,146.86
51729	Cystometrogram with voiding pressure studies and urethral pressure profile studies	2.18 (2.13-2.24), <.0001	3,252,052.98
76770	Retroperitoneal ultrasound, complete	2.20 (2.17-2.24), <.0001	4,755,240.07
55866	Laparoscopic radical prostatectomy	2.34 (2.14-2.56), <.0001	3,373,207.43
52332	Cystoscopy & treatment (insertion of indwelling ureteral stent)	1.45 (1.43-1.47), <.0001	1,420,763.13
76775	Retroperitoneal ultrasound, limited	2.26 (2.23-2.30), <.0001	4,459,061.30
74178	CT abdomen and pelvis, with and without contrast	1.87 (1.82-1. 92), <.0001	1,339,492.12
52648	Laser surgery of prostate	1.40 (1.35-1.46), <.0001	1,293,545.21
76857	Pelvis ultrasound, limited	2.78 (1.74-2.82), <.0001	4,935,149.76
51784	EMG of anal or urethral sphincter	2.34 (2.31-2.38), <.0001	3,306,251.02
51797	Intra-abdominal voiding pressure studies	2.20 (2.17-2.24), <.0001	2,372,794.71
51741	Complex uroflowmetry	2.52 (2.50-2.54), <.0001	4,305,536.55
76856	Pelvic ultrasound, complete	3.52 (3.43-3.61), <.0001	3,982,200.28
J3315	Triptorelin pamoate	1.11 (1.09-1.13), <.0001	1,074,729.61
81000	Urinalysis, nonautomated with microscopy	1.01 (1.00-1.02), <.0001	180,082.50
J0897	Denosumab injection	2.17 (2.15-2.19), <.0001	1,427,346.18
99231	Subsequent hospital care	1.58 (1.56-1.59), <.0001	2,616,777.68
51702	Insertion of temporary indwelling bladder catheter	1.10 (1.09-1.12), <.0001	1,062,698.50
96402	Antineoplastic hormonal therapy, intramuscular or subcutaneous injection	1.42 (1.40-1.43), <.0001	811,313.72
52310	Cystoscopy and treatment	1.43 (1.40-1.47), <.0001	917,689.30
52353	Cystoureteroscopy with lithotripsy	1.44 (1.38-1.49), <.0001	792,224.98
51720	Treatment of bladder lesion	1.30 (0.28-1.32), <.0001	633,940.63
99221	Initial hospital care	1.41 (1.39-1.44), <.0001	1,293,385.95
81003	Urinalysis automated without microscopy	1.10 (1.09-1.11), <.0001	228,615.57

Relative risk of performing the 40 most frequently reimbursed HCPCS codes/services per patient visit by the top quartile urologists vs. bottom quartile urologists and potential cost savings by standard utilization

•Total Medicare payment to the 8.792 urologists participating in Medicare in 2012: $1,385,385,392 (1.8% of total Medicare payments)
•Median Medicare payment among urologists: $125,997 (IQR $58,812-$213,162)
•Highest payment to an individual urologist > $2,000,000
•Linear regression analysis revealed that the total number of patient visits was strongly associated with overall Medicare payment (R^2=0.70)
•40 most highly reimbursed HCPCS codes by the highest gross reimbursement amount to all urologists identified – accounted for $693,210,926 (50% of total Medicare payment to all urologists)
•All 40 services were utilized significantly more frequently per patient visit by urologists in the highest quartile compared to those in the lowest quartile
•Potential overall Medicare cost savings: $125,199,007 (9.0% of total Medicare reimbursement to all urologists in 2012)



Total Medicare payment vs. total patient visits among urologists

Conclusions

Overall Medicare payments to urologists correlated well with the number of patient visits. There is substantial variability in utilization of commonly performed services per patient visit. This type of analysis has the potential to lead to significant cost savings via appropriate standardized utilization of services. However, the current PUF data is inadequate to drive decision-making. We advocate for the release of corresponding beneficiary clinical information in future versions of the PUF.

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