

Supplemental Digital Content 2: Table. Details of the multivariable multinomial logistic regression model examining the association between technological capacity and treatment (i.e., surgery, radiotherapy, or observation). We characterized the capacity for delivering treatment with new technology for each Hospital Referral Region and year by calculating robotic prostatectomy and IMRT provider densities. The numerator was the number of physicians providing robotic prostatectomy or IMRT treatments in each HRR in a given year. The denominator was the number of male Medicare beneficiaries residing within the HRR based on population estimates for the ZIP Code Tabulation Areas. From this model, we calculated adjusted treatment rates (number of men treated per 1,000 diagnosed) for HRRs with low versus high robotic prostatectomy capacity (i.e., robotic prostatectomy capacity in the lowest versus highest tertile, respectively) and low versus high IMRT capacity (i.e., IMRT capacity in the lowest versus highest tertile, respectively). CI: confidence interval; IMRT: intensity-modulated radiotherapy. McFadden's pseudo R^2 for this model was 0.158.

	Relative Risk Ratio	Lower bound of 95% CI	Upper bound of 95% CI	p-value
Surgery versus Observation				
Robotic prostatectomy provider density (per 100,000 male Medicare beneficiaries)	1.02	1.01	1.04	0.006
IMRT provider density (per 100,000 male Medicare beneficiaries)	1.00	0.98	1.01	0.767
Year of diagnosis				
2003	Reference			
2004	0.94	0.82	1.08	0.410
2005	0.87	0.73	1.04	0.132
2006	0.94	0.78	1.13	0.524
2007	1.08	0.89	1.32	0.450
Age in years	0.70	0.69	0.72	<0.001

	Relative Risk Ratio	Lower bound of 95% CI	Upper bound of 95% CI	p-value
Race				
White	Reference			
African American	0.33	0.29	0.39	<0.001
Hispanic	1.00	0.80	1.26	0.970
Asian	0.84	0.67	1.05	0.131
Other/Unknown	0.90	0.69	1.19	0.473
Comorbidity				
0	Reference			
1	0.82	0.75	0.89	<0.001
2	0.48	0.42	0.53	<0.001
3 or more	0.23	0.19	0.29	<0.001
Clinical Stage				
1	Reference			
2	1.09	0.95	1.25	0.227
3	0.96	0.67	1.38	0.830
4	0.19	0.10	0.37	<0.001
Grade				
Well / moderately differentiated	Reference			
Poorly / undifferentiated	2.78	2.57	3.02	<0.001
Living in census tract in which 25% or more of adults had a college education	1.26	1.15	1.39	<0.001
Median annual household income of census tract	1.06	1.03	1.08	<0.001
Residing in urban area	1.07	0.80	1.44	0.630
Number of urologists per 100,000 population	1.00	1.00	1.00	0.219
Number of radiation oncologists per 100,000 population	1.00	1.00	1.00	0.578
Number of hospital beds per 100,000 population	1.00	1.00	1.00	0.072
Medicare advantage penetration (%)	1.01	1.00	1.01	0.231
Radiation oncologist volume	1.00	0.99	1.01	0.648
Surgeon volume	1.05	1.03	1.07	<0.001

	Relative Risk Ratio	Lower bound of 95% CI	Upper bound of 95% CI	p-value
Radiation versus Observation				
Robotic prostatectomy provider density (per 100,000 male Medicare beneficiaries)	1.00	0.98	1.01	0.371
IMRT provider density (per 100,000 male Medicare beneficiaries)	1.01	0.99	1.02	0.365
Year of diagnosis				
2003	Reference			
2004	1.06	0.99	1.14	0.098
2005	1.08	0.99	1.19	0.091
2006	1.16	1.05	1.28	0.002
2007	1.25	1.11	1.40	<0.001
Age in years	0.88	0.87	0.88	<0.001
Race				
White	Reference			
African American	0.62	0.56	0.69	<0.001
Hispanic	1.04	0.86	1.27	0.681
Asian	1.27	0.91	1.77	0.156
Other/Unknown	0.95	0.73	1.23	0.693
Comorbidity				
0	Reference			
1	1.10	1.05	1.15	<0.001
2	0.87	0.81	0.94	<0.001
3 or more	0.67	0.61	0.74	<0.001
Clinical Stage				
1	Reference			
2	0.94	0.86	1.03	0.180
3	1.43	1.18	1.73	<0.001
4	0.54	0.39	0.75	<0.001
Grade				
Well / moderately differentiated	Reference			
Poorly / undifferentiated	1.44	1.34	1.54	<0.001
Living in census tract in which 25% or more of adults had a college education	1.14	1.06	1.24	0.001
Median annual household income of census tract	1.05	1.03	1.07	<0.001
Residing in urban area	1.24	1.07	1.44	0.004
Number of urologists per 100,000 population	1.00	1.00	1.00	0.262
Number of radiation oncologists per 100,000 population	1.00	1.00	1.00	0.621

	Relative Risk Ratio	Lower bound of 95% CI	Upper bound of 95% CI	p-value
Number of hospital beds per 100,000 population	1.00	1.00	1.00	0.612
Medicare advantage penetration (%)	0.99	0.99	1.00	0.074
Radiation oncologist volume	1.01	1.01	1.01	<0.001
Surgeon volume	0.99	0.98	1.00	0.086