

Letters

RESEARCH LETTER

Comparing Publicly Reported Surgical Outcomes With Quality Measures From a Statewide Improvement Collaborative

The recent release of a Surgeon Scorecard has accelerated debate around the merits of publicly reporting surgical outcomes.¹ Based on Medicare claims from 2009 through 2013, this scorecard provides the public with surgeon-specific complication rates for 8 elective procedures performed by nearly 17 000 surgeons. While the intent of this effort—greater transparency leading to better outcomes—is laudable, many contend that the scorecard is misleading because it provides data for a single outcome measure that may not correlate well with other quality metrics.

We used data from the statewide clinical registry maintained by the Michigan Urological Surgery Improvement Collaborative (MUSIC) to evaluate this concern for one of the scorecard procedures—radical prostatectomy (RP) for prostate cancer. We specifically examined whether surgeon-specific complication rates reported in the scorecard correlate with several perioperative quality measures endorsed by MUSIC urologists and patient advocates.²

Methods | Established with support from the Blue Cross Blue Shield of Michigan, MUSIC is a consortium of 42 urology practices in Michigan that account for nearly 85% of urologists in the state. The collaborative maintains a prospective clinical registry, which includes detailed and validated intraoperative and postoperative clinical data obtained via medical record review by trained abstractors for all patients undergoing RP in participating practices.³

For this analysis, we identified every urologist in Michigan with both a risk-adjusted complication rate (ie, 30-day related readmission or in-hospital mortality) for RP in the Surgeon Scorecard released by ProPublica and outcome data for 10 or more RPs in the MUSIC registry.

We then fit multivariable models to estimate risk-standardized, surgeon-specific performance on several metrics tracked in MUSIC to assess technical quality and recovery after RP.² These include blood loss, surgical margin status, pelvic complications, and 30-day readmissions and mortality. Using linear regression, we then examined the correlation between each MUSIC metric and the scorecard outcome. Statistical testing was performed at the 5% significance level using electronic software (StataCorp). Each practice obtained institutional review board approval of not-regulated status for collaborative participation.

Results | Among the 48 surgeons from Michigan with complication rates reported in the scorecard, 40 participate in MUSIC, and 35 had data in the registry for at least 10 prostatecto-

mies with more than 30 days of follow-up (Table). For this group (n = 35), case volumes in the scorecard and MUSIC registry ranged from 20 to 190 and 15 to 334, respectively.

Table. Surgeon Case Volumes in the MUSIC Registry

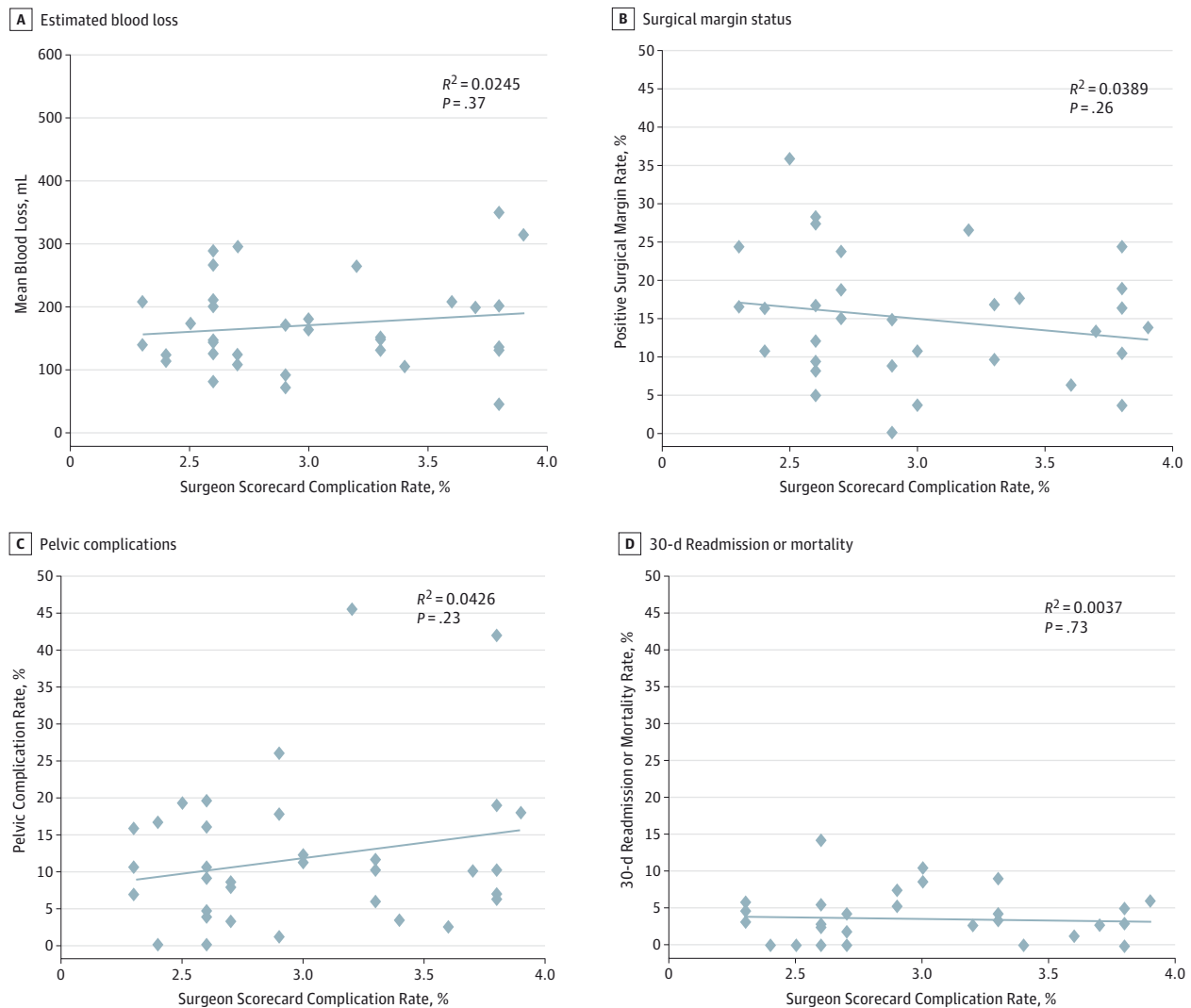
MUSIC Surgeon	No. of Prostatectomies	Time Since Collaborative Entry, mo ^a	Annualized Prostatectomy Rate ^b
1	24	36	7.9
2	23	32	8.5
3	15	16	11.3
4	26	26	12.1
5	30	29	12.4
6	24	21	14.0
7	38	31	14.7
8	42	34	14.9
9	45	36	15.0
10	49	36	16.4
11	53	37	17.4
12	55	36	18.5
13	44	29	18.5
14	63	36	21.1
15	70	36	23.4
16	56	28	23.9
17	51	25	24.6
18	53	24	26.9
19	69	11	29.8
20	27	28	30.3
21	64	24	31.4
22	38	14	31.5
23	66	25	31.6
24	35	12	33.7
25	105	36	34.6
26	56	19	35.6
27	81	23	41.8
28	74	21	41.9
29	83	22	45.4
30	46	12	47.1
31	196	37	63.5
32	137	25	65.0
33	197	36	66.3
34	323	37	104.7
35	334	26	155.2

Abbreviation: MUSIC, Michigan Urological Surgery Improvement Collaborative.

^a Surgeon enrollment in MUSIC occurred in a staggered fashion since 2011. This analysis includes all cases entered for each surgeon through May 31, 2015.

^b Estimated average number of prostatectomies done per 12 months since collaborative entry. Linear regression analysis of annualized rates identified moderately strong correlation between case volumes from MUSIC and as reported in the scorecard ($R^2 = 0.60$; $P < .001$).

Figure. Comparison of Surgeon-Specific Perioperative Outcomes From the Surgeon Scorecard and Michigan Urological Surgery Improvement Collaborative



The complication rate for the Surgeon Scorecard (x-axis) was a composite measure of in-hospital mortality or related hospital readmission within 30 days of surgery, adjusted for patient age, comorbidity, and surgical approach (ie, open vs robotic). The models for the Michigan Urological Surgery Improvement Collaborative (y-axis) are adjusted for patient age, comorbidity, and surgical approach (ie, open vs robotic) and account for the clustering of outcomes within surgeons. A, Estimated blood loss. B, Surgical margin status for patients

with organ-confined disease (pathologic stage = T2). Margin data are reported for 34 of 35 surgeons in the collaborative. C, Pelvic complications, defined by the Michigan Urological Surgery Improvement Collaborative as the occurrence of intraoperative rectal injury or the requirement for urinary catheter or pelvic drain for greater than 16 or 2 days, respectively. Data for this measure have been collected since April 1, 2014. D, Thirty-day rate of readmission or mortality.

Across 4 separate surgeon-specific outcomes, including a combined metric of 30-day readmissions and mortality analogous to that from the publicly reported data, we noted only weak, nonsignificant correlations (R^2 range, 0.004-0.04) between measures from the MUSIC registry and complication rates from the scorecard (Figure).

Discussion | For urologists in Michigan, we found no significant correlation between complication rates reported in the Surgeon Scorecard and perioperative quality measures from a statewide improvement collaborative. This finding supports a prevalent concern that the limited data available in the

scorecard provide an incomplete, if not inaccurate, assessment of surgeon performance.⁴

However, there are other potential explanations for our findings. First, because dates for included surgical procedures were not entirely congruent between the data sources, the absence of correlations could reflect changes in surgical performance over time. Second, we only examined data for urologists in Michigan; stronger correlations may exist for surgeons from other regions or for other procedures.

Nonetheless, our findings highlight limitations with emerging public reporting initiatives. Quality-improvement collaboratives represent an established alternative that provide

surgeons with comparative performance feedback on meaningful clinical and patient-reported outcomes while linking these measures with specific improvement initiatives.⁵ Urologists in Michigan have used this model to achieve population-level improvements in several aspects of prostate cancer care³ while avoiding potential inadvertent consequences of public reporting.⁶

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Correction: This article was corrected on May 25, 2016, to fix an unclear description in the figure legend of the methods used by the Surgeon Scorecard.

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