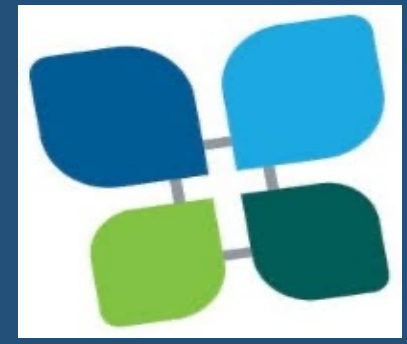


# Impacts on functional and oncological outcomes of Robotic-assisted Radical Prostatectomy 10

## years after the Taskforce recommendations against PSA screening.

23-4910



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### Introduction

For experienced surgeons, prostate cancer outcomes are ultimately affected by the pathology of the disease they treat. Over the last decade and a half, we have experienced a dramatic alteration in the pathology that we are addressing. During this time, the most significant shift in prostate cancer management was observed following the May 2012 decision by the United States Preventive Service Task Force (USPSTF) that recommended against PSA screening for all men. This has affected the types of prostate cancers we are treating and can potentially influence treatment outcomes.

We aimed to analyze the functional and oncologic trends in prostate cancer outcomes in the largest single surgeon, single practice series.

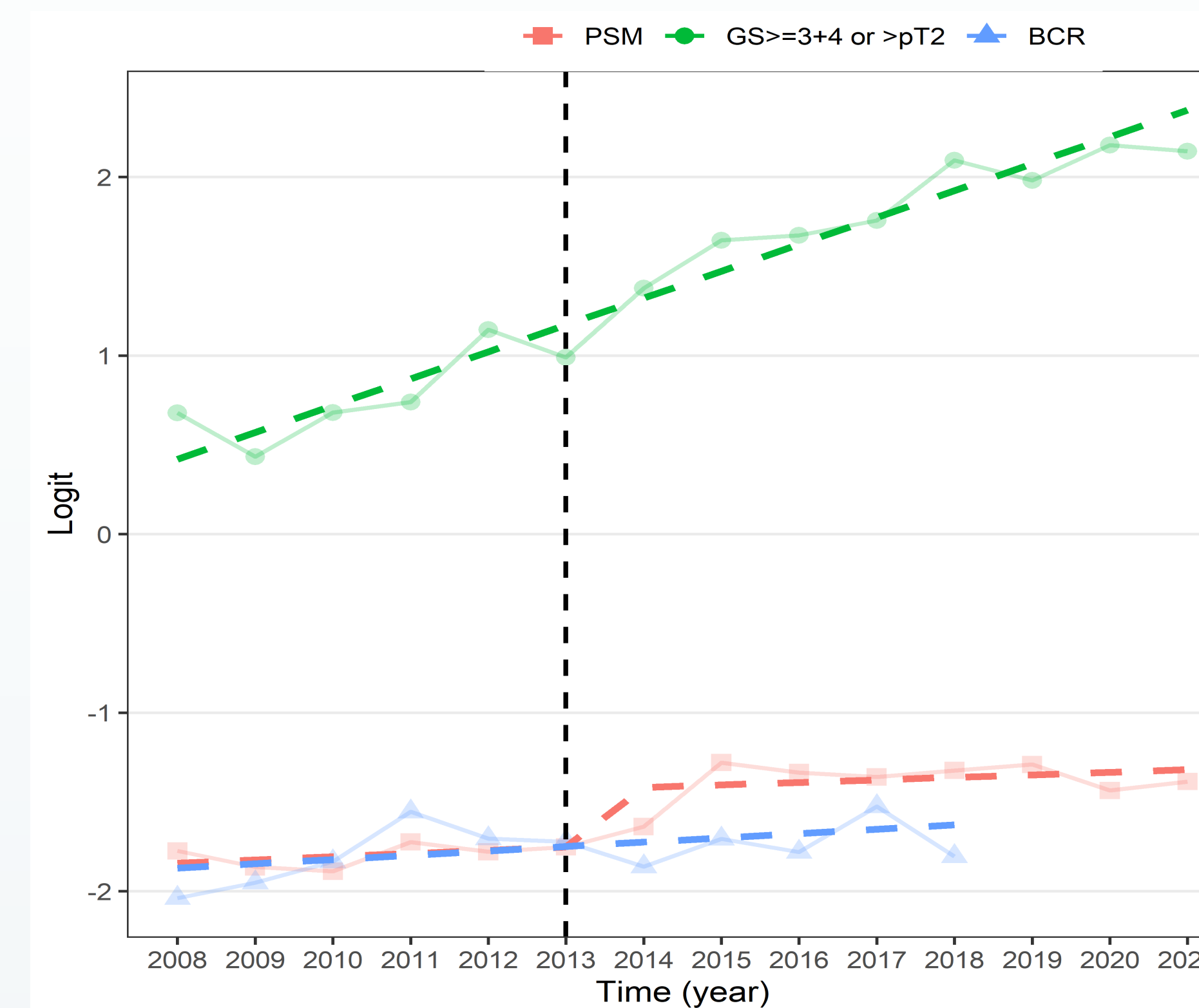
### Methodology

We retrospectively reviewed our prospective IRB-approved prostate cancer registry for 11396 patients that underwent robotic-assisted laparoscopic prostatectomy (RALP) between 2008 and 2021. Each patient had at least a 12-month follow-up. The cohort was divided into two groups based on the date of RALP: Group 1, before USPSTF recommendations took effect (01/2008-12/2012); and Group 2 no fewer than six months following the implementation of USPSTF recommendations (01/2013-12/2021). Group 1 had 4760 patients, and Group 2 had 6636 patients, with a median follow-up of 109 and 38 months, respectively. We assessed the functional and oncologic outcomes of the two groups.

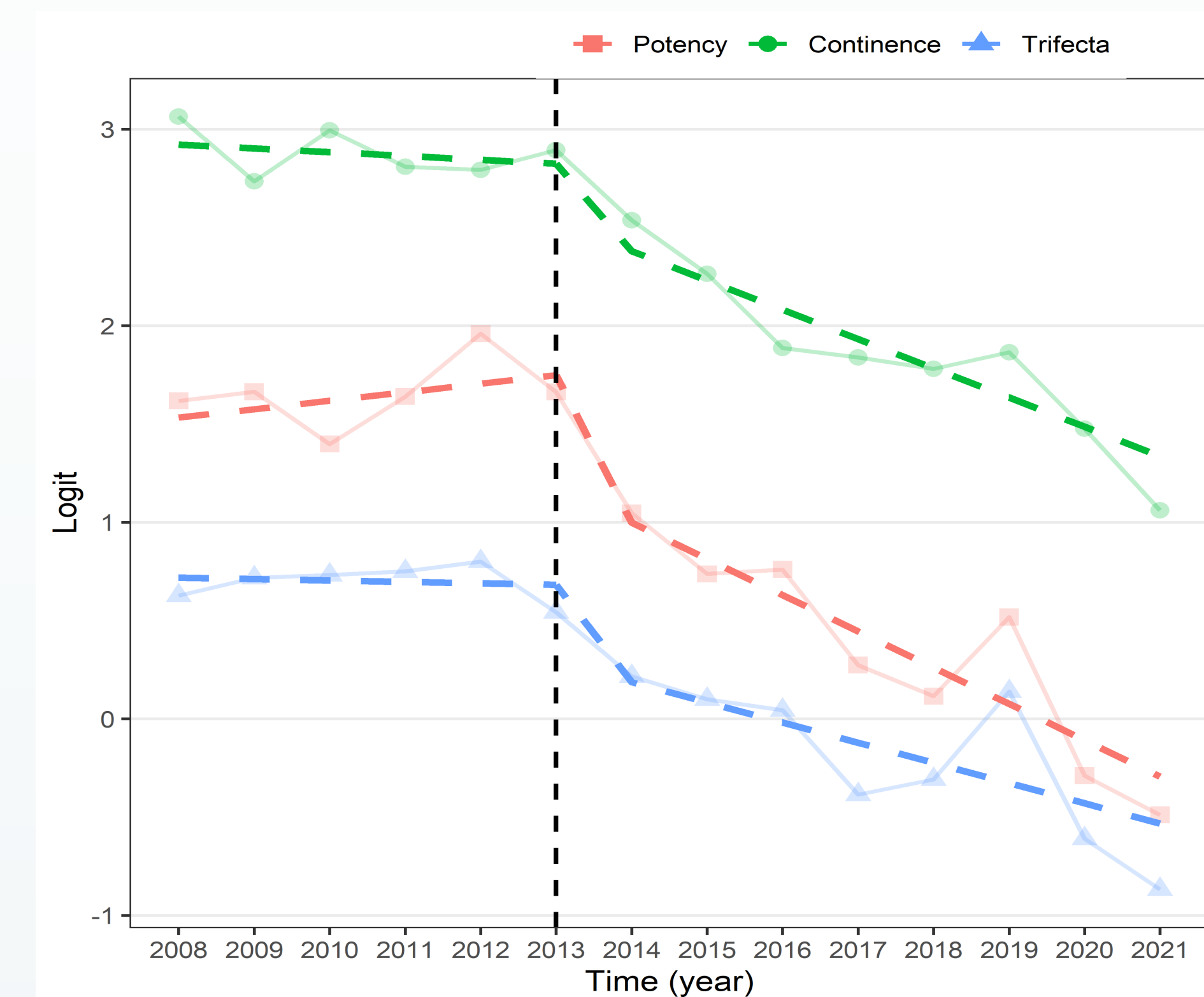
### Results

Parameters	January 2008 to December 2012	January 2013 to December 2021	P
Total number of patients	4760	6636	< 0.001
Tumor dimension on pathology report (centimeters)	1.5 (1-2)	1.6 (1.2- 2.1)	< 0.001
Follow-up (months) (Median, IQR)	109 (68- 121)	38 (24-62)	< 0.001
Pathological Grade Group (GrGP), (%)			
GrGP1	32	13	< 0.001
GrGP2	44	39	
GrGP3	15	26	
GrGP4	3	4	
GrGP5	6	18	
Pathological Stage, (%)			
pT2	75	57	< 0.001
≥pT3	25	43	
Overall PSM, (%)	14.3	20.3	< 0.001
PSM on pT2, (%)	7.6	7.1	< 0.001
PSM on ≥pT3, (%)	6.7	13.2	< 0.001
Overall Continence achieved, (%)	95	87	< 0.001
Overall Potency achieved, (%)	67	40	< 0.001
Potency in patients with SHIM ≥ 21, (%)	82	54	< 0.001
Potency in patients with SHIM ≥ 21 and full nerve-sparing, (%)	86	73	< 0.001
Overall Trifecta achieved, (%)	54	32	< 0.001

**Table 2:** Comparison of pathological characteristics in both cohorts reporting the median with the interquartile range (IQR) for continuous variables and the number of patients with the percentage for categorical variables. GrGp (Grade Group), EPE (Extracapsular Extension), PSM (Positive Surgical Margins), PSA (Prostate Specific Antigen).



**Figure 1:** Trend change analysis (logit scale) before and after 2012 showing increasing Gleason  $\geq 7$  or  $\geq pT3$  and increasing positive surgical margins (PSM). Biochemical recurrence (BCR) was considered in patients with follow-up  $\geq 5$  years to avoid a curve drop and false impression of BCR reduction after 2017.



**Figure 2:** Trend change analysis (logit scale) before and after 2012 illustrating functional outcomes reduction (potency, continence, and trifecta).

We detected time-trend changes after 2012 with negative impacts on the surgical outcomes:

- 18% increase in the higher grade and stage of the disease, Gleason  $\geq 3+4$  (19% increase), and  $\geq pT3$  (18% increase).
- 6% increase in positive surgical margins
- 24% reduction in full nerve sparing in response to the worsening pathology.
- 12-month continence reduction of 9%, reduction in potency by 27%, and reduction trifecta by 22%.

### Conclusion

In our experience, we have witnessed a significant change in the types of patients we are seeing and the outcomes we are able to deliver. We are treating younger patients with higher-grade diseases, and the increasing number of high-risk patients has led to worse functional and oncologic outcomes. The initial rapid rise in PSM was leveled by the move towards more partial nerve sparing. The USPSTF recommendation has affected the oncology and outcomes of prostate cancer in an increasingly younger patient population who could benefit from PSA screening at the appropriate time.