



# The rate of PIRADS-3 is not a proxy of the quality of mp-MRI of the prostate: results of a single, high volume radiologist series

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## INTRODUCTION

The rate and trend over time of PIRADS 3 at mp-MRI has been suggested to represent a proxy of radiologist experience and quality. Our hypothesis is that radiologist experience is not necessarily associated with a decreasing rate of PI-RADS 3 over time. Rather, detection of clinically significant prostate cancer (csPCa) should be correlated with radiologist expertise. We tested our hypothesis in a large series of mp-MRI assessed by a single, high volume reader.

## MATERIALS AND METHODS

We identified 402 men who underwent a systematic plus targeted biopsy (TBx) for a positive MRI (PI-RADS $\geq$ 3) reported by a single radiologist at a tertiary referral centre between 2013 and 2019. The study outcome was to assess the trend of PI-RADS score (3 vs 4/5) over time and its association with the trend of csPCa (Gleason score $\geq$ 7) diagnosis at TBx. Multivariable logistic regression analysis (MVA) predicting the presence of PI-RADS 3 and 4/5 respectively were performed using age, PSA density (defined as PSA/prostate volume), biopsy history and year of biopsy (yob) as covariates. Non-parametric loess function was used to graphically explore the relationship between yob and rate of PI-RADS 3 and 4/5. Furthermore, the same analysis was used to assess the relationship between yob and csPCa detection.

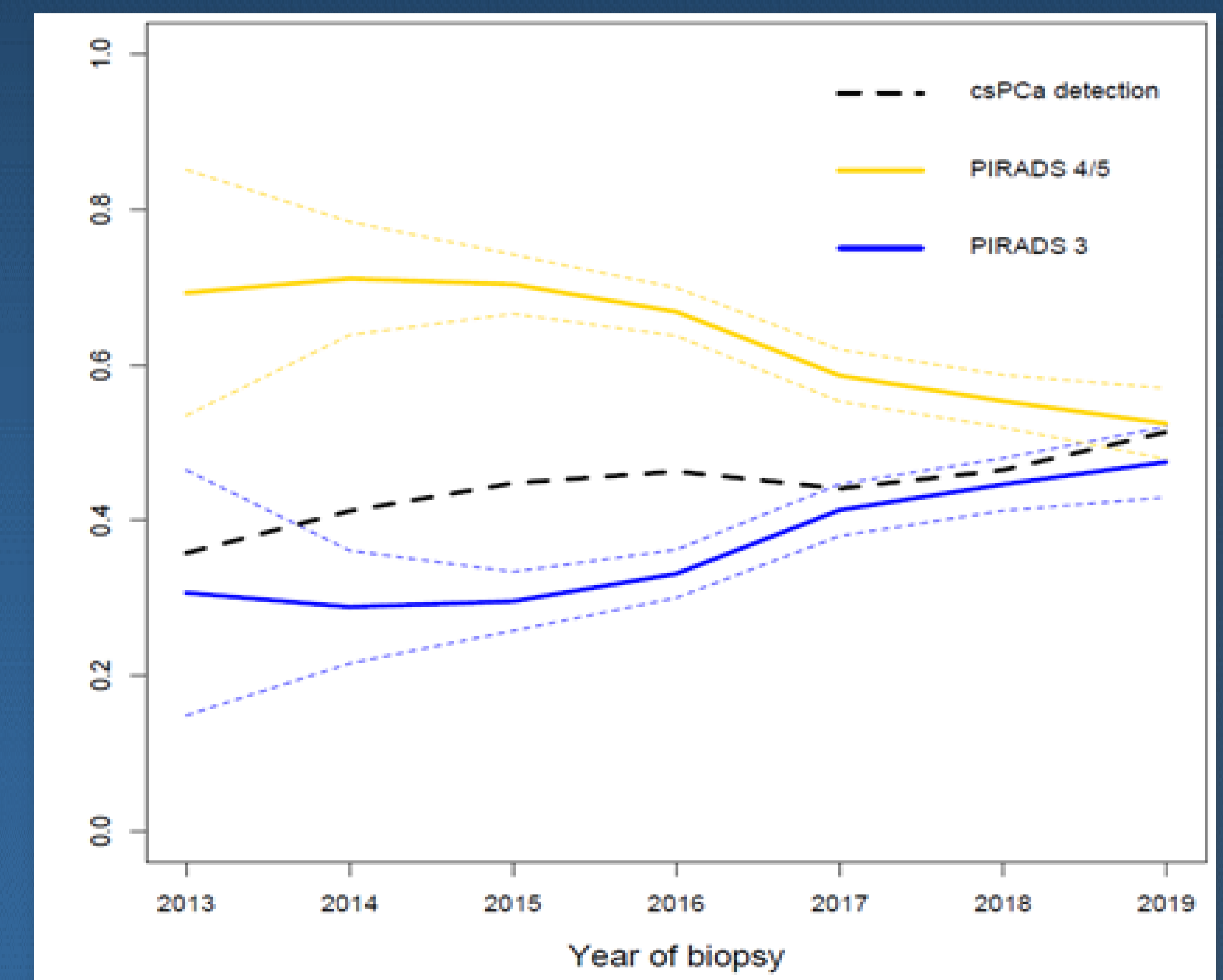
### Patients characteristics

Variable	Overall (n=402)
Age at biopsy Median (range)	65 (59-72)
PSA Median (range)	6.4 (4.4-9.3)
Prostate volume Median (range)	48 (35-68.8)
N.target sample Median (range)	3 (3-4)
N.random sample Median (range)	12 (10-12)
Overall csPCa (%)	197 (49)
csPCa at TBx (%)	178 (44.3)
csPCa at SBx (%)	158 (39.3)

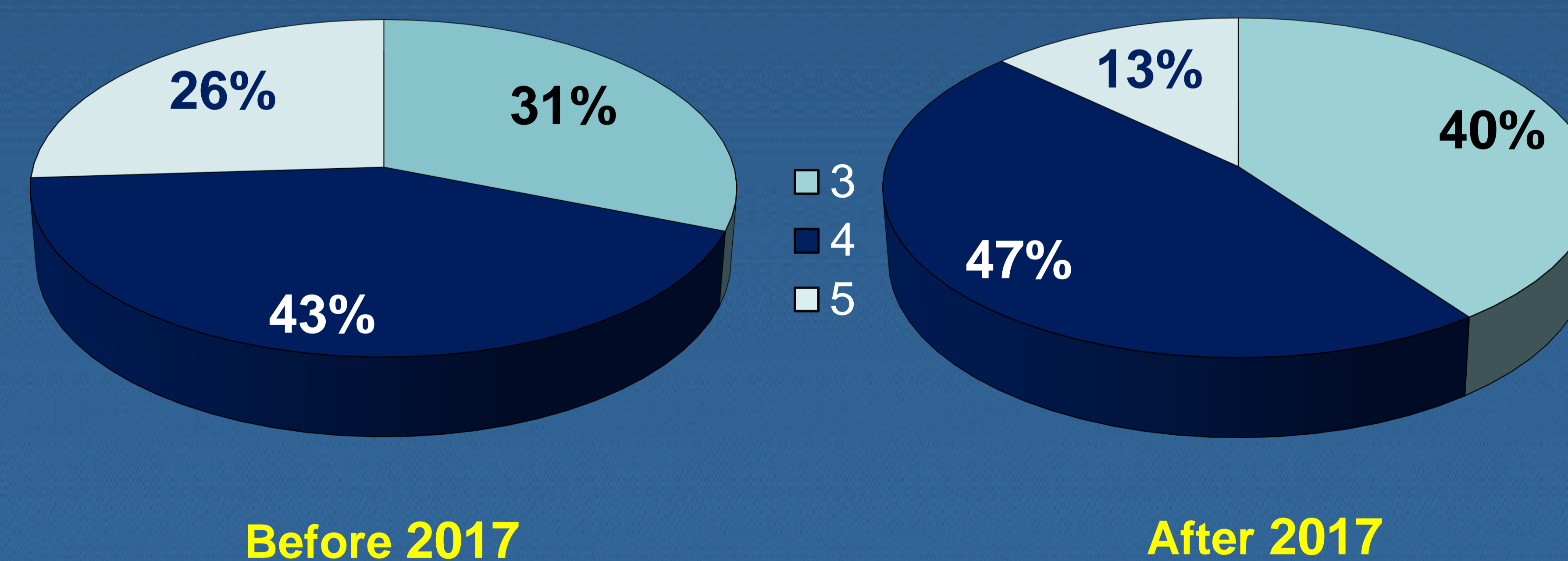
## RESULTS

Predictors	MVA predicting PIRADS 3		MVA predicting PIRADS $\geq$ 4	
	OR (95% CI)	P-value	OR (95% CI)	P-value
Year of biopsy	1.22	0.04	0.8	0.04
PSA density	0.004	<0.001	25	<0.001
Age	0.9	<0.001	1.07	<0.001
Biopsy history				
Naïve	Ref	-	Ref	-
Repeat biopsy	0.9	0.7	1.13	0.7
Active surveillance	0.8	0.6	1.28	0.6

### Proportion of PIRADS and csPCa detection over time



### Trend of PI-RADS over time



## CONCLUSIONS

The rate of PI-RADS 3 is not necessarily a proxy of radiologist expertise since it increased over time even in the hands of a single, highly experienced reader. Rather, the detection of csPCa over time should be considered as the main endpoint and a more accurate proxy of radiologist and urologist expertise