

(MP42-18) Increasing Utilization of Magnetic Resonance Imaging (MRI) Prior to Prostate Biopsy in Black and non-Black Men: an Analysis of the SEER-Medicare cohort

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OBJECTIVE:

- The potential for significant disparities in adoption of prostate MRI exists in the setting of increased adoption.
- We sought to assess temporal trends in the utilization of MRI prior to prostate biopsy in a nationally representative sample.

MATERIALS AND METHODS:

- Using the Surveillance, Epidemiology, and End Results (SEER)-Medicare linked database, we identified men undergoing prostate biopsy who had an MRI within 6 months of diagnosis of prostate cancer.
- Men were stratified according to whether they were biopsy naïve or had undergone a prior negative prostate biopsy.

RESULTS:

- We identified 82,483 men undergoing prostate biopsy in SEER-Medicare from 2008 to 2015 of whom 78,253 were biopsy naïve and 4230 had a known prior negative biopsy.
- Baseline characteristics are detailed in Table 1.
- We found MRI use prior to biopsy has been increasing from 2008-2015 (0.51% to 9.15%, $p < 0.01$) (Figure 1).
- This increase was greatest from 2013-2015, with utilization increasing from 3.19% to 5.45% from 2013 to 2014 and from 5.45% to 9.15% from 2014 to 2015.
- The use of MRI increased in biopsy naïve men (0.50% to 8.15%, $p < 0.01$) and in men with a prior negative biopsy (1.35% to 25.5%, $p < 0.01$).
- On multivariable modeling (Table 2):
 - the odds ratio (OR) of MRI before biopsy for black men compared to white men was less than half (OR 0.43, 95% confidence interval 0.3-0.6, $p < 0.01$)
 - the odds of MRI before biopsy in men from the Northeast was more than three times that of men from the West (OR 3.5, 95% confidence interval 2.8-4.3, $p < 0.01$).
 - Men with a prior negative biopsy were more likely to have an MRI before biopsy (OR 4.4, 95% confidence interval 3.6-5.4, $p < 0.01$)

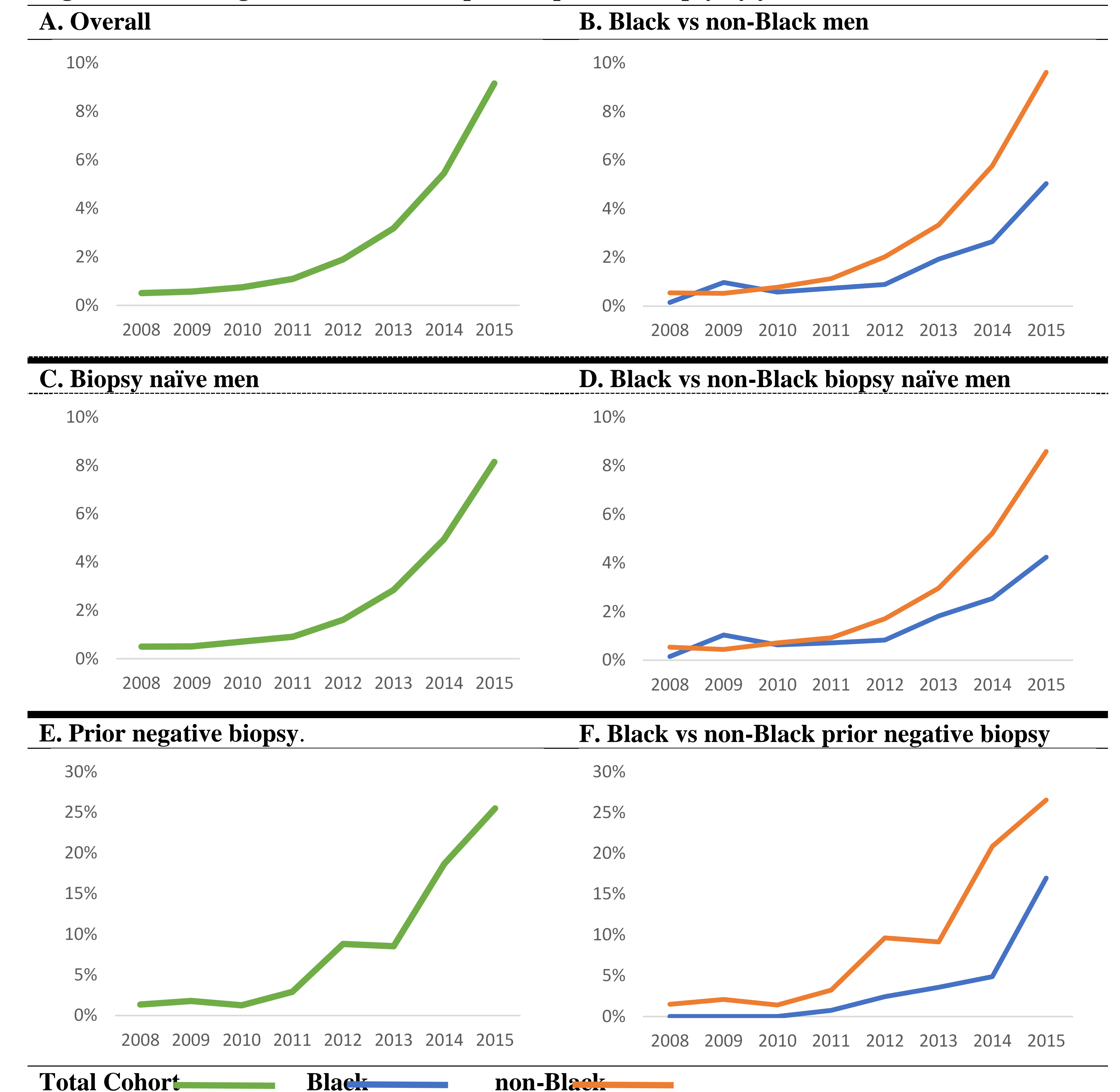
Table 1. Characteristics of the study population.

	Biopsy Naïve		Prior Negative Biopsy		p-value
	Without MRI	With MRI	Without MRI	With MRI	
Age, median (IQR), years	73(70-77)	72(69-76)	72 (69- 76)	72 (69- 76)	<0.001
Year					<0.001
2008-2009	24030(99.5%)	122(0.5%)	693(98.3%)	12(1.7%)	
2010-2011	21412(99.2%)	175(0.8%)	1812(97.8%)	41(2.2%)	
2012-2013	16438(97.8%)	372(2.2%)	813(91.3%)	77(8.7%)	
2014-2015	14674(93.4%)	1030(6.6%)	603(77.1%)	179(22.9%)	
PSA, median (IQR), ng/mL	6.7(4.9-10.3)	7.3(5.1-11.6)	8.1(5.6-12.4)	10.0(7.2-16.0)	<0.001
CCI, median (IQR)	0 (0,2)	2(0-2)	0 (0-2)	2 (0-2)	<0.001
Race					<0.001
White	63480(97.7%)	1474(2.3%)	3174(92.1%)	272(7.9%)	
Black	8102(98.7%)	108(1.3%)	492(97.0%)	15(3.0%)	
Other	4,962(97.7%)	116 (2.3%)	253 (91.7%)	23 (8.3%)	
Region					<0.001
Northeast	15697(96.9%)	503(3.1%)	968(90.3%)	104(9.7%)	
South	9845(98.9.0%)	105(1.1%)	479(94.5%)	28(5.5%)	
West	9665(98.9%)	108(1.1%)	442(96.3%)	17(3.7%)	
Midwest	9517(99.4%)	62(99.4%)	511(97.1%)	15(2.9%)	
Socioeconomic Status					<0.001
Low	18511(98.5%)	283(1.5%)	952(95.3%)	47(4.7%)	
Middle	39732(97.7%)	920(2.3%)	2031(92.5%)	164(7.5%)	
High	14882(97.2%)	436(2.8%)	758(89.9%)	85(10.1%)	
Missing	3429(98.3%)	60(1.7%)	180(93.3%)	13(6.7%)	

Table 2. Multivariable Logistic Regression Assessing the Independent Impact of Patient Characteristics on MRI Utilization

Variable	OR	95% CI	p-value
Age			
65-69	Referent		
70-74	0.8	0.6-0.9	0.003
75-79	0.6	0.5-0.8	<0.001
80+	0.5	0.4-0.7	<0.001
Region			
West	Referent		
Northeast	3.5	2.8-4.4	<0.001
South	1.1	0.8-1.5	0.41
Midwest	0.6	0.4-0.8	<0.001
Race			
White	Referent		
Black	0.4	0.3-0.6	<0.001
Hispanic	0.5	0.2-1.2	0.11
Other	1.4	1.0-1.9	0.072
Socioeconomic Status			
Low	Referent		
Missing	1.3	0.8-2.0	0.30
Medium	1.2	1.0-1.5	0.13
High	1.0	0.8-1.3	0.88
CCI*	1.1	1.1-1.2	<0.001
Year of Diagnosis (Ref 2014-2015)			
2014-2015	Referent		
2008-2009	0.1	0.1-0.1	<0.001
2010-2011	0.1	0.1-0.1	<0.001
2012-2013	0.3	0.2-0.3	<0.001
PSA	1.0	1.0-1.0	<0.001
Prior Negative Biopsy	4.4	3.6-5.4	<0.001

Figure 1. Percentage of Men with MRI prior to prostate biopsy by year.



CONCLUSION:

Despite a steady overall increase in the utilization of MRI prior to prostate biopsy since 2008 there have been significant racial and regional disparities in MRI utilization.