

2015 American Thyroid Association Guidelines and Outcomes for Patients with Thyroid Cancer

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Objective/Background

- In January 2016, the American Thyroid Association (ATA) guidelines recommended hemithyroidectomy as initial treatment for smaller (1-4cm) primary thyroid carcinomas, particularly for papillary (PTC) and follicular thyroid cancer (FTC)
- This study evaluated the association between the guideline release and initial surgical procedures for patients with smaller PTC/FTC tumors

Methods

- Data: 2009-2018 National Cancer Database (NCDB)
- 2009-2011 was used as baseline to avoid bias from the evidence regarding hemithyroidectomy benefits before the guideline release
- A linear probability model was used to assess trends in hemithyroidectomy over time, adjusting for patient, disease, and hospital characteristics
- Stratified analyses by adding an interaction between year and tumor size and an interaction between year and hospital type

Table 1. Patient characteristics		Table 2. Results of linear probability model of year and hemithyroidectomy utilization				
Variable	All (N=80,381)	Variable	Coefficient	95%		P-value
				Lower	Upper	
Surgery		2009-2011	REFERENCE			
Hemithyroidectomy	11.2%	2012	-0.008	-0.016	0.000	0.052
Total thyroidectomy	88.8%	2013	-0.021	-0.028	-0.013	<0.0001
		2014	-0.018	-0.026	-0.010	<0.0001
		2015	-0.008	-0.015	0.000	0.046
Age	49.1	2016	0.010	0.003	0.018	0.008
18-39	29.2%	2017	0.033	0.025	0.041	<0.0001
40-49	22.0%	2018	0.071	0.063	0.079	<0.0001
50-59	22.7%					
≥60	26.1%	Age				
		18-39	REFERENCE			
Sex		40-49	-0.002	-0.008	0.004	0.520
Female	76.8%	50-59	-0.004	-0.010	0.002	0.220
Male	23.2%	≥60	-0.003	-0.010	0.004	0.442
Race		Sex				
White	85.3%	Female	REFERENCE			
Black	6.5%	Male	0.01	0.006	0.017	<0.0001
Asian	5.8%					
Other	2.4%	Race				
		White	REFERENCE			
		Black	0.022	0.013	0.030	<0.0001
		Asian	0.005	-0.004	0.014	0.266
		Other	0.007	-0.006	0.021	0.291
Charlson Deyo Score						
0	83.4%	Charlson Deyo Score				
1	13.2%	0	REFERENCE			
≥2	3.4%	1	-0.004	-0.011	0.002	0.195
		≥2	-0.011	-0.023	0.000	0.060
Insurance status						
Private Insurance / Managed Care	70.6%	Insurance status				
Medicare	18.0%	Private insurance / Managed Care	REFERENCE			
Medicaid	7.5%	Medicare	0.004	-0.003	0.011	0.282
Governmental	1.3%	Medicaid	0.012	0.003	0.020	0.005
Uninsured	2.6%	Uninsured	-0.001	-0.014	0.012	0.899
		Governmental	0.001	-0.017	0.020	0.882
Margin status						
Negative	87.8%	Margin status				
Positive	12.2%	Negative	REFERENCE			
		Positive	-0.031	-0.038	-0.024	<0.0001
Radiation treatment						
No	45.1%	Radiation treatment				
Yes	54.9%	No	REFERENCE			
		Yes	-0.125	-0.129	-0.121	<0.0001
Tumor size (cm)						
1.1-2.0	61.2%	Tumor size (cm)				
2.1-3.0	28.1%	1.1-2.0	REFERENCE			
3.1-3.9	10.7%	2.1-3.0	0.008	0.003	0.013	0.001
		3.1-3.9	0.021	0.014	0.028	<0.0001
Thyroid cancer type						
Papillary thyroid cancer	94.3%	Thyroid cancer type				
Follicular thyroid cancer	5.7%	Papillary thyroid cancer	REFERENCE			
		Follicular thyroid cancer	0.160	0.150	0.169	<0.0001



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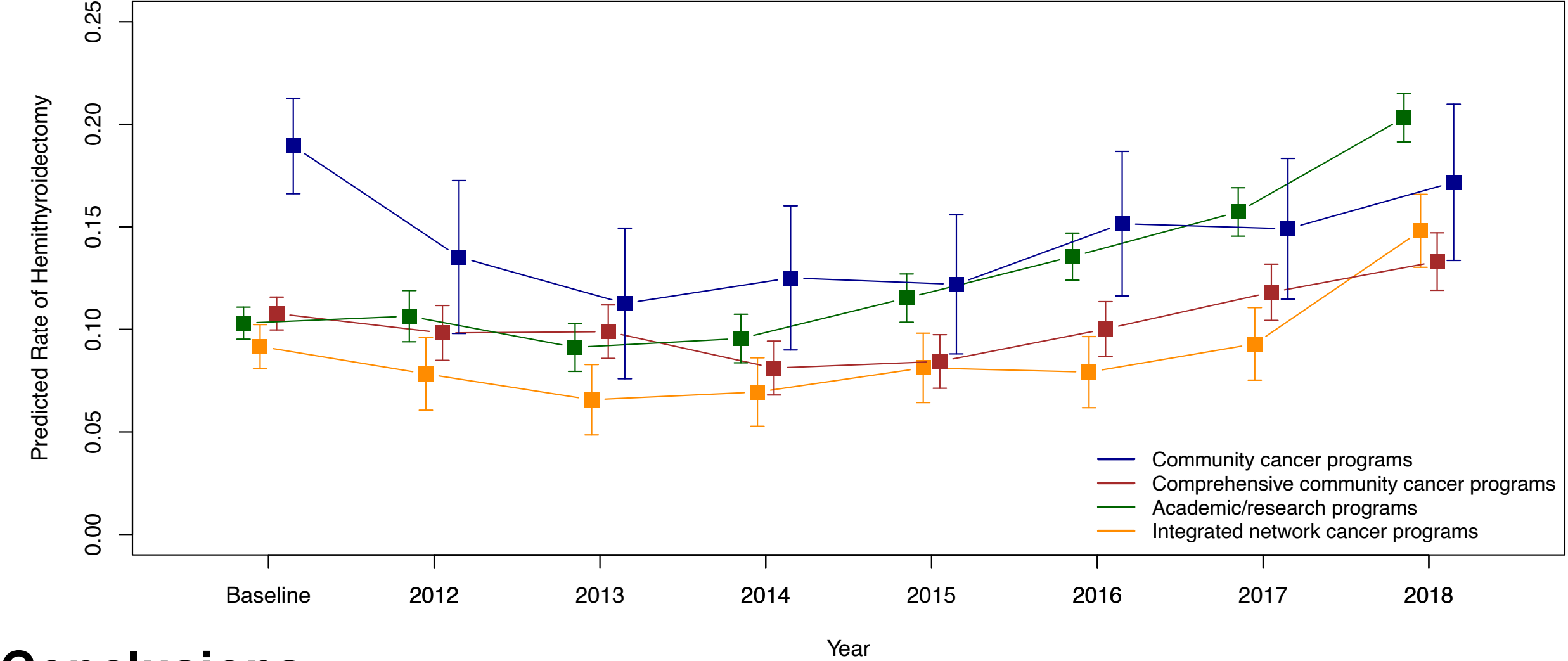
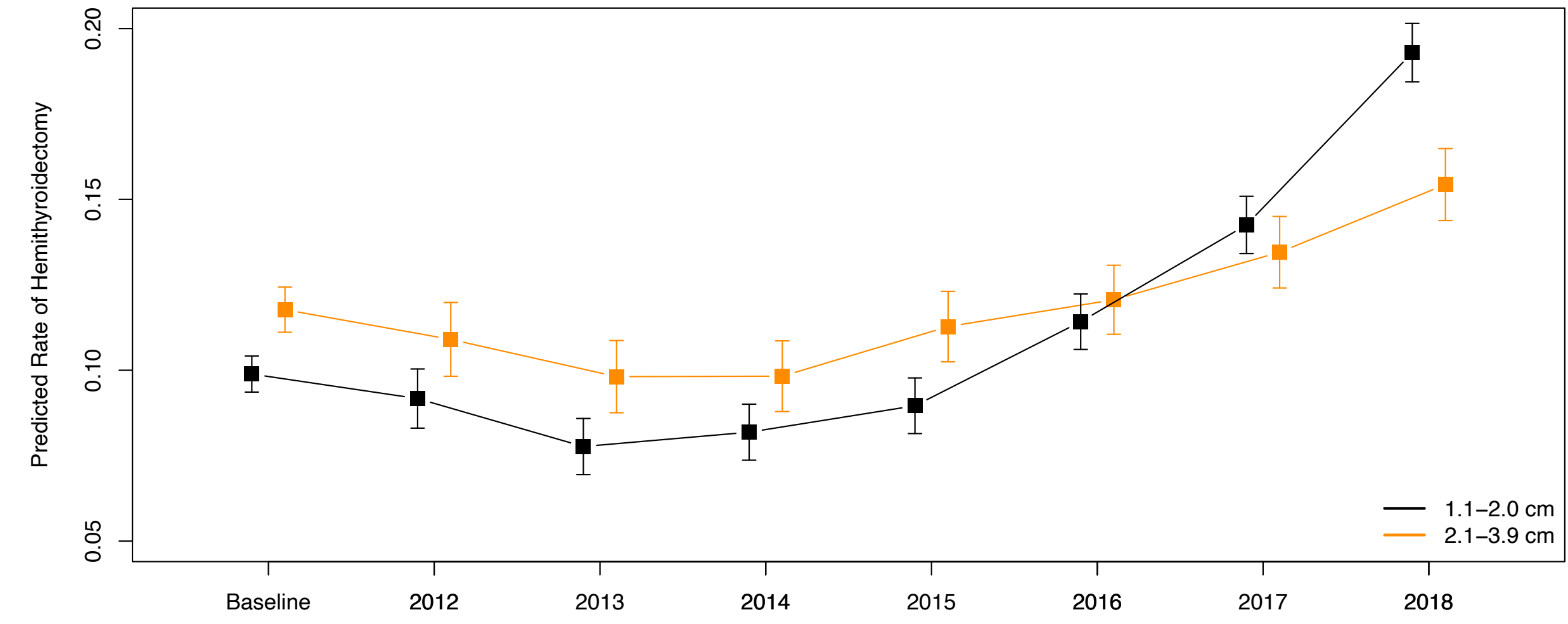
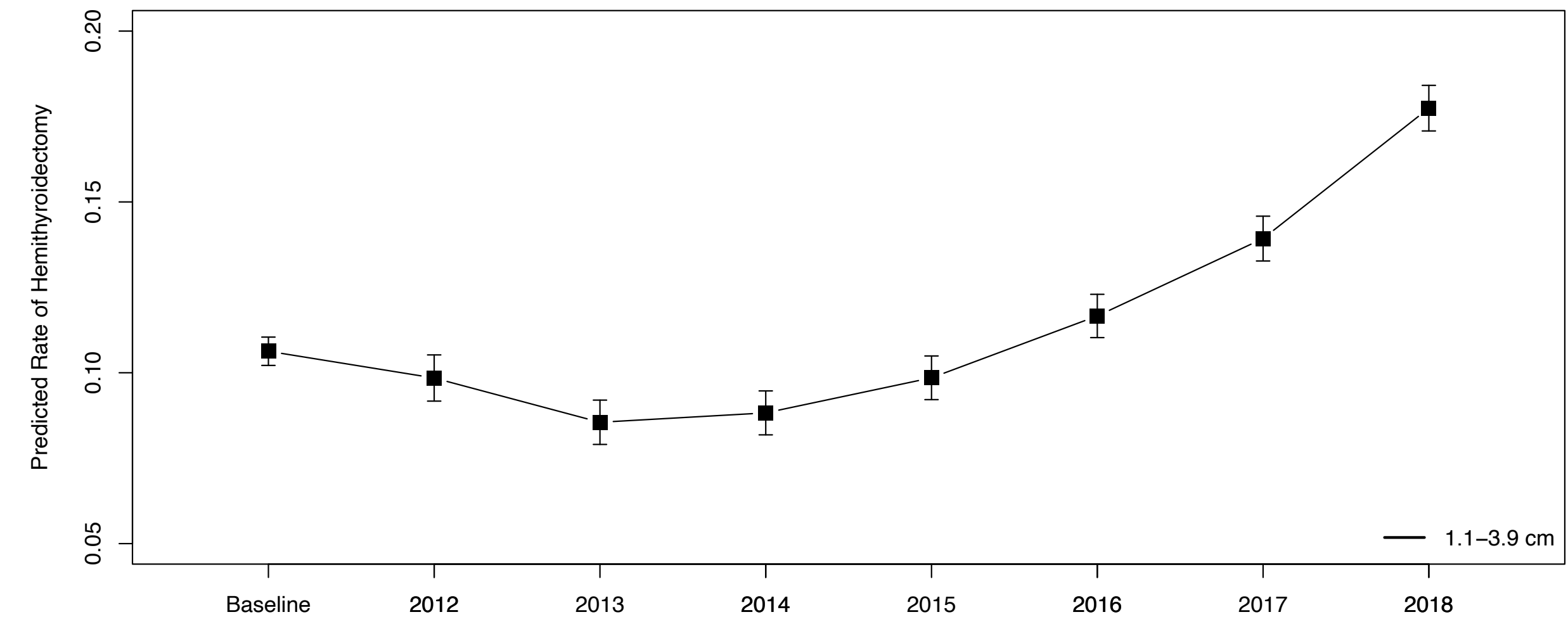
Although the hope is that clinical guidelines will shift clinical practice in the direction of the best available evidence, it appears for thyroid cancer that the guidelines were mostly a reflection of the evidence and practice that surgeons had already figured out.



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Key Results

- Hemithyroidectomy utilization did not change significantly from 2012-2015 relative to the 2009-2011 baseline
- Following the guideline release, however, hemithyroidectomy utilization increased significantly in 2016 (1.2%, p=0.004), 2017 (3.5%, p<0.0001), and 2018 (7.2%, p<0.0001)
- The stratified analysis by tumor size showed hemithyroidectomy utilization significantly increased beginning in 2014 for tumors 1.1-2.0 cm (p<0.0001) and in 2015 for tumors 2.1-3.9 cm (p<0.0001)
- Further stratified analysis showed significant differences in timing of the shift to hemithyroidectomy by hospital type; Hemithyroidectomy utilization significantly increased beginning in 2015 for comprehensive community cancer programs (p<0.0001), and in 2014 for other hospitals (p<0.0001)



Conclusions

- Although hemithyroidectomy utilization among patients with PTC and FTC tumors 1-4 cm significantly increased following the 2015 ATA guideline, the guideline does not appear to be the catalyst for most hospitals
- Research-focused cancer centers began increasing hemithyroidectomy two years before the guidelines were released, and only CCP hospitals began to increase hemithyroidectomy utilization following the guideline release

Contact information

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