

The evolution of head and neck cancer patient characteristics following passage of the Affordable Care Act

Dara R. Adams, Emily Papazian, Kristine Kuchta, Cheryl C. Nocon, Mihir K. Bhayani

Introduction

- Uninsured patients experience worse health outcomes, reduced cancer survival
- The 2013 Patient Protection and Affordable Care Act (ACA) aimed to improve access to care, has been associated with declining uninsurance in new cancer patients¹⁻⁴
- Objective:** To examine the ACA’s impact on key prognostic indicators for survival among patients with head and neck squamous cell carcinoma (HNSCC), including insurance status, stage at diagnosis, comorbidity burden, choice of treatment facility.

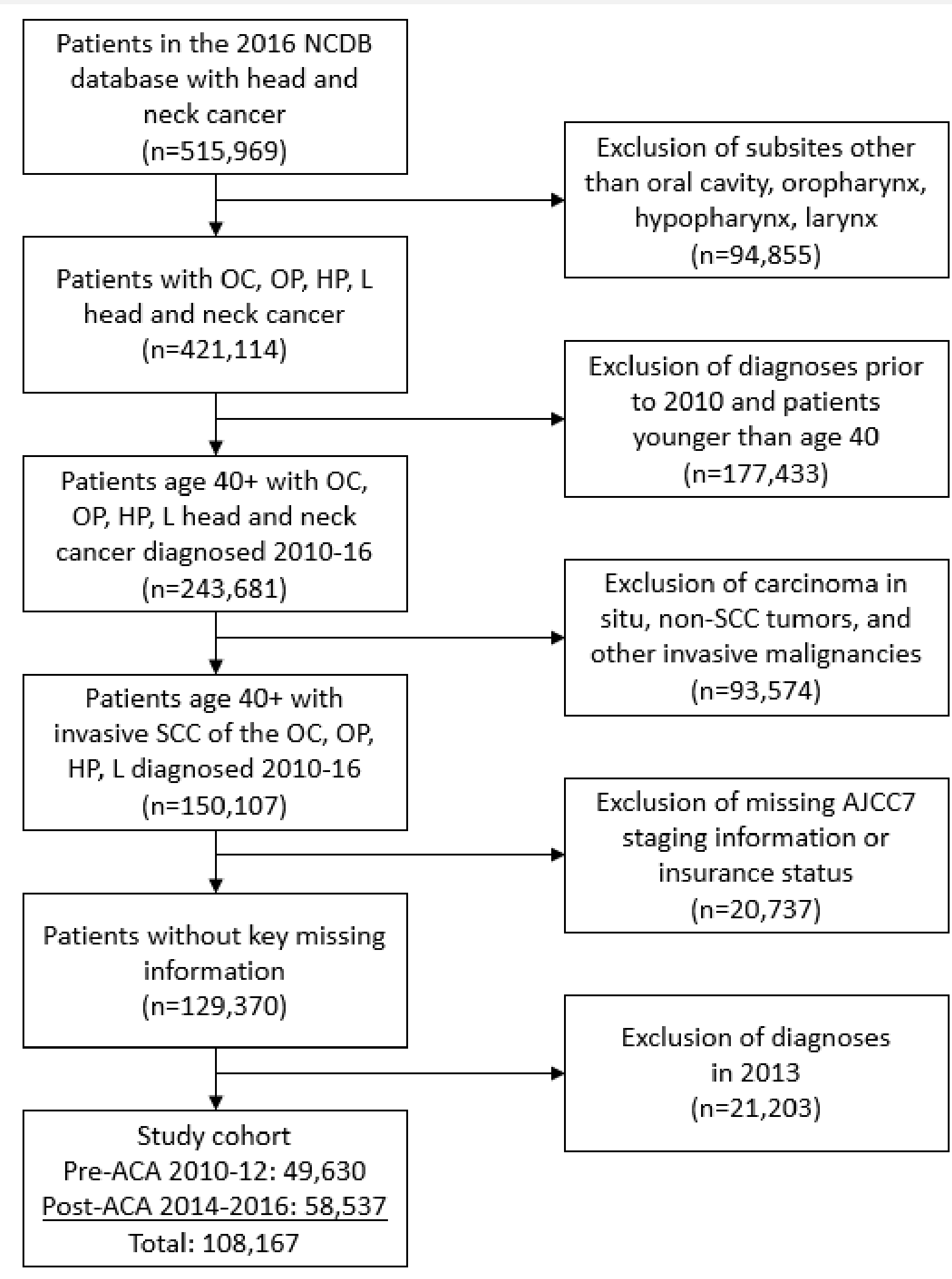
Methods

Data source
2016 National Cancer Data Base, captures > 70% new diagnoses

Study design
Retrospective cohort study

Study cohort
Patients with invasive HNSCC (oral cavity, oropharynx, hypopharynx, larynx) before ACA (2010-12) and after (2014-16)

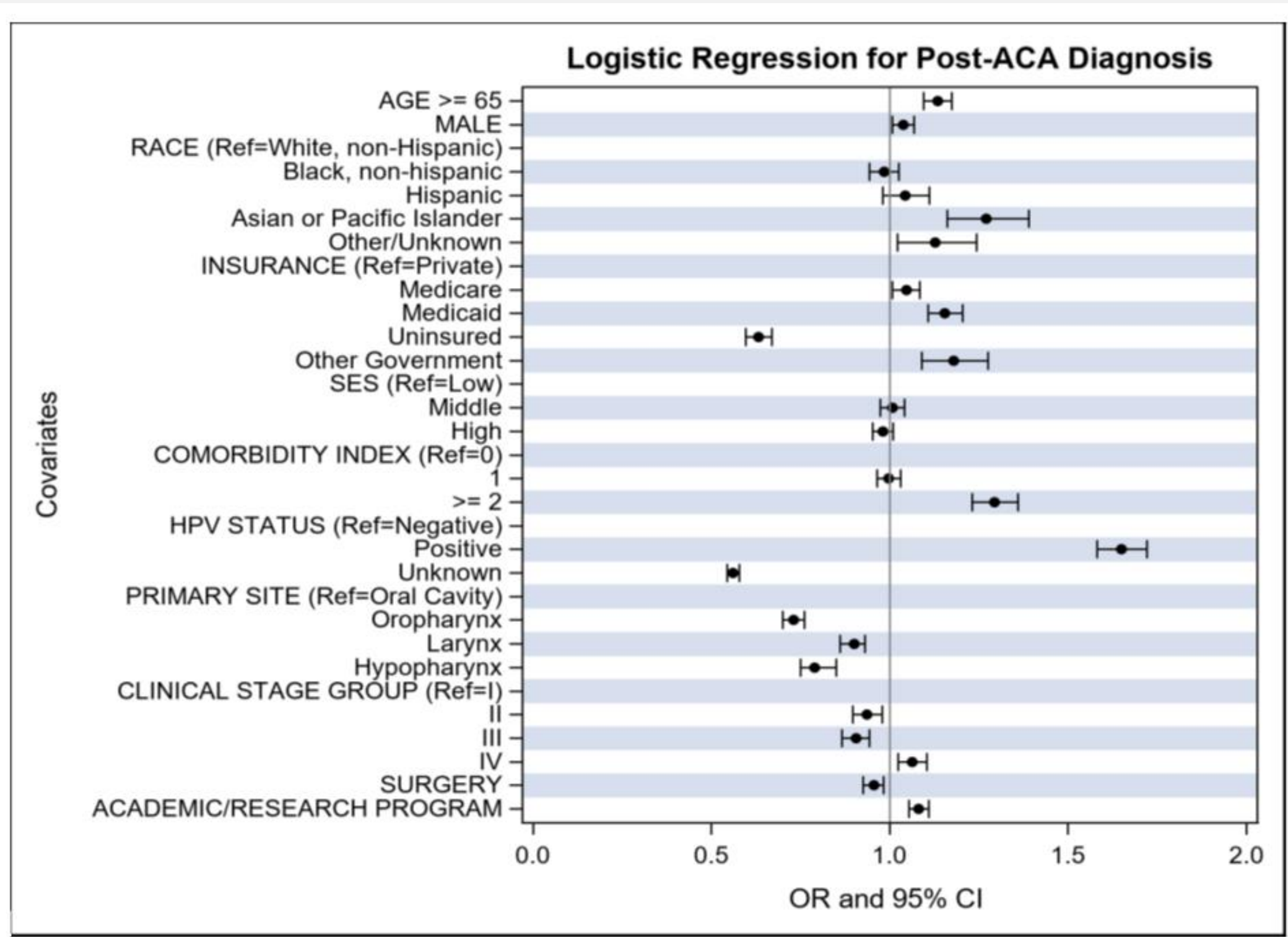
Statistical analysis
Multivariable logistic regression including covariates: age, sex, race/ethnicity, insurance status, SES, comorbidity (Charlson-Deyo), primary site, HPV status, clinical stage, surgical treatment, facility type



Patient characteristics

Characteristic	All (n=108,167)	Pre-ACA 2010-2012 (n=49,630)	Post-ACA 2014-2016 (n=58,537)	<i>P Value</i>
Age, years mean ± SD	62 ± 11	62 ± 11	63 ± 10	<0.001
Sex, No. (%)				
Male	82,217 (76.0)	37,439 (75.4)	44,778 (76.5)	<0.001
Female	25,950 (24.0)	12,191 (24.6)	13,759 (23.5)	
Race/ethnicity, No. (%)				
White, non-Hispanic	88,647 (82.0)	40,591 (81.8)	48,056 (82.1)	<0.001
Black, non-Hispanic	11,192 (10.3)	5,362 (10.8)	5,830 (10.0)	
Hispanic	4,495 (4.2)	2,068 (4.2)	2,427 (4.1)	
Asian or Pacific Islander	2,111 (2.0)	860 (1.7)	1,251 (2.1)	
Other or unknown	1,722 (1.6)	749 (1.5)	973 (1.7)	
Insurance status, No. (%)				
Private	44,396 (41.0)	20,264 (40.8)	24,132 (41.2)	<0.001
Medicare	42,107 (38.9)	18,881 (38.0)	23,226 (39.7)	
Medicaid	12,972 (12.0)	5,772 (11.6)	7,200 (12.3)	
Uninsured	5,839 (5.4)	3,478 (7.0)	2,361 (4.0)	
Other government	2,853 (2.6)	1,235 (2.5)	1,618 (2.8)	
Socioeconomic status, No. (%)				
Low	37,533 (34.7)	17,619 (35.5)	19,914 (34.0)	<0.001
Middle	24,471 (22.6)	11,140 (22.4)	13,331 (22.8)	
High	45,881 (42.4)	20,712 (41.7)	25,169 (43.0)	
Unknown	282 (0.3)	139 (0.3)	123 (0.2)	
Comorbidity Index, No. (%)				
0	81,886 (75.7)	37,826 (76.2)	44,060 (75.3)	<0.001
1	18,898 (17.5)	8,823 (17.8)	10,075 (17.2)	
≥2	7,383 (6.8)	2,981 (6.0)	4,402 (7.5)	
Primary site, No. (%)				
Oral cavity	26,597 (24.6)	12,098 (24.4)	14,499 (24.8)	<0.001
Oropharynx	45,257 (41.8)	19,885 (40.1)	25,372 (43.3)	
Hypopharynx	5,304 (4.9)	2,581 (5.2)	2,723 (4.7)	
Larynx	31,009 (28.7)	15,066 (30.4)	15,943 (27.2)	
HPV status, No. (%)				
Negative	21,916 (20.3)	8,671 (17.5)	13,245 (22.6)	<0.001
Positive	21,812 (20.2)	6,766 (13.6)	15,046 (25.7)	
Unknown	64,439 (59.6)	34,193 (68.9)	30,246 (51.7)	
Clinical T, No. (%)				
1	31,312 (28.9)	14,537 (29.3)	16,775 (28.7)	0.013
2	34,898 (32.4)	15,842 (31.9)	19,156 (32.7)	
3	20,834 (19.3)	9,644 (19.4)	11,190 (19.1)	
4	21,023 (19.4)	9,607 (19.4)	11,416 (19.5)	
Clinical N, No. (%)				
0	46,475 (43.0)	22,136 (44.6)	24,339 (41.6)	<0.001
1	24,262 (22.4)	9,857 (19.9)	14,405 (24.6)	
2A	9,685 (9.0)	4,500 (9.1)	5,185 (8.9)	

Multivariable logistic regression



Results

- Post-ACA HNSCC patients are
- more likely to have Medicaid (OR 1.16, 95% CI: 1.11-1.20) and less likely to be uninsured (OR 0.63, 95% CI: 0.60-0.67), as expected
 - no different in SES (high vs. low, OR 0.98, 95% CI: 0.95-1.01)
 - more likely stage IV at diagnosis and less likely stages II-III (IV vs. I, OR 1.06, 95% CI: 1.02-1.10; III vs. I, OR 0.91, 95% CI: 0.87-0.94; II vs. I, OR 0.94, 95% CI: 0.90-0.98)
 - more comorbid (Index ≥ 2 vs. 0, OR 1.29, 95% CI: 1.23-1.36)
 - more likely to be treated at academic center (OR 1.08, 95% CI: 1.05-1.11)

Limitations

- Unable to determine causality
- NCDB includes >70% new cancer diagnoses, missing some patients
- Covariates recorded at single timepoint but may change throughout course of treatment
- Reliance on physician coding of conditions for comorbidity measure

Conclusions

- Post-ACA HNSCC patients are
- more likely **insured** and seen at **academic medical center**, both associated with higher survival
 - higher comorbidity**- possibly due to better diagnosis of medical problems, influx of patients previously limited by comorbidity exclusions
 - more likely stage IV and less likely stages II-III at diagnosis compared to stage I- further investigation warranted

ACA’s impact on prognostic factors gives insight into possible future survival benefit in HNSCC.

References

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