

# Racial Disparities in Curative Surgery For Black Early Non- Small Cell Lung Cancer Patients in Florida, 2005-2017

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## Background

- The NIH lists lung cancer as the second most common cancer in the U.S. in both sexes.
- Over 80% of all lung cancer cases are non-small cell cancer (NSCLC), and about 13% small cell lung cancer.
- Blacks often seen as a homogenous group in the US, in fact show remarkable diversity in terms of genome, social, economic characteristics.

## Materials/ Methods

- The Florida Cancer Data System (FCDS), identified 80,458 patients diagnosed with NSCLC from 2005-2017.
- FCDS data was linked to discharge data inclusive of comorbidities for each patient
- Multivariable logistic regression was conducted to identify the role of sociodemographic factors in treatment of NSCLC via curative surgery.

## Results

Table 2. Multivariate logistic models for predictors of receiving curative-intent surgery in early-stage NSCLC Black patients, 2005-2017

	Odds Ratio (95% CI)		
	Curative surgery		
	Model 1	Model 3	Model 4
	Age-adjusted	Full multivariable model without radiotherapy	Full multivariable model with radiotherapy
Age group			
<55	1 [Reference]	1 [Reference]	1 [Reference]
55-64	0.89 (0.72 to 1.09)	0.77 (0.6 to 0.99)	0.76 (0.6 to 0.98)
65-74	0.78 (0.64 to 0.95)	0.62 (0.48 to 0.80)	0.62 (0.48 to 0.8)
75+	0.42 (0.34 to 0.52)	0.31 (0.24 to 0.41)	0.31 (0.24 to 0.41)
Race			
U.S. born black (n=3,992)	1 [Reference]	1 [Reference]	1 [Reference]
Afro-Haitians black (n=184)	1.12 (0.83 to 1.52)	0.91 (0.62 to 1.35)	0.91 (0.62 to 1.34)
West Indian black (n=311)	1.70 (1.34 to 2.15)	1.37 (1.02 to 1.83)	1.40 (1.04 to 1.87)
Hispanic black (n=183)	1.61 (1.19 to 2.17)	1.27 (0.89 to 1.82)	1.28 (0.90 to 1.84)
Charlson Comorbidity Index (CCI)			
CCI=0		1 [Reference]	1 [Reference]
1 ≤ CCI ≤ 2		1.13 (0.95 to 1.33)	1.13 (0.96 to 1.34)
CCI ≥ 3		0.76 (0.61 to 0.95)	0.76 (0.61 to 0.94)
Curative radiotherapy			
No			1 [Reference]
Yes			0.44 (0.32 to 0.60)
Sex			
Male		1 [Reference]	1 [Reference]
Female		1.36 (1.18 to 1.57)	1.38 (1.19 to 1.59)
Smoking status			
Nonsmoker		1 [Reference]	1 [Reference]
Current smoker		0.79 (0.63 to 1.00)	0.80 (0.64 to 1.01)
Former smoker		0.95 (0.76 to 1.19)	0.97 (0.77 to 1.21)
Unknown		0.87 (0.68 to 1.12)	0.88 (0.68 to 1.14)
Poverty level			
0% – <5% poverty		1 [Reference]	1 [Reference]
5% – <10% poverty		0.93 (0.61 to 1.41)	0.93 (0.62 to 1.41)
10% – <20% poverty		0.85 (0.58 to 1.25)	0.85 (0.58 to 1.25)
20% – 100% poverty		0.72 (0.50 to 1.05)	0.71 (0.49 to 1.04)
Unknown or not applicable		0.92 (0.37 to 2.29)	0.90 (0.36 to 2.25)

## Conclusion

- All Blacks subgroups are less likely to receive curative-intent surgery compared to Whites.
- Racial disparities, regardless of adjustments for comorbidities, SES, and clinical factors, persist.
- Patients with a Charlson Comorbidity Index (CCI)≥3 had 33% lower odds of having curative surgery (OR 0.67; 95%CI, 0.63-0.71) compared to patients with 0 comorbidities.

## Future Research

Future studies should focus on the role of physician-patient encounters as a potential source of racial disparities

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