

Table S1 Comparison of baseline characteristics based on stage at diagnosis

Variables	Subcategories	Stage at diagnosis			P value
		Overall (n=2,772)	Early stage (n=1,130, 40.76%)	Advanced stage (n=1,642, 59.24%)	
Gender	Female	1317 (47.51)	593 (45.03)	724 (54.97)	<0.0001*
	Male	1455 (52.49)	537 (36.91)	918 (63.09)	
Cigarette use at time of diagnosis (n=1,669)	Currently smoked	750 (44.94)	264 (35.20)	486 (64.80)	<0.0001*
	Formerly smoked	591 (35.41)	292 (49.41)	299 (50.59)	
	Never used	328 (19.65)	141 (42.99)	187 (57.01)	
Insurance	Medicaid	231 (8.33)	66 (28.57)	165 (71.43)	<0.0001*
	Medicare	1268 (45.74)	630 (49.68)	638 (50.32)	
	Medicare/Medicaid	120 (4.33)	49 (40.83)	71 (59.17)	
	Private	937 (33.80)	338 (36.07)	599 (63.93)	
	Uninsured, self-pay	216 (7.79)	47 (21.76)	169 (78.24)	
Marital status at diagnosis (n=2,519)	Divorced or separated	294 (11.67)	116 (39.46)	178 (60.54)	<0.0001*
	Married	1601 (63.56)	671 (41.91)	930 (58.09)	
	Single	336 (13.34)	102 (30.36)	234 (69.64)	
	Widowed	288 (11.43)	142 (49.31)	146 (50.69)	
Age at diagnosis (years)	–	63.42±11.23	66.00±10.65	61.64±11.27	<0.0001*
Race	Black	358 (12.91)	83 (23.18)	275 (76.82)	<0.0001*
	White	2414 (87.09)	1047 (43.37)	1367 (56.63)	

Data are presented as n (%) or mean ± standard deviation. For categories with missing values, overall patient number (n) is provided. P value comparisons across stage at diagnosis categories are based on Chi-square test of homogeneity for categorical variables; P values for continuous variables are based on the Wilcoxon Rank Sum Test. *, P value <0.05.

Table S2 Association of social determinants of health with advanced stage in patients with newly diagnosed non-small cell lung cancer (univariable logistic regression analysis)

Covariate	OR	95% CI for OR	P value
Gender			<0.0001*
Male	1.400	1.203–1.630	<0.0001*
Female	Reference	–	–
Cigarette use at time of diagnosis			<0.0001*
Currently smoked	1.388	1.065–1.809	0.0153*
Formerly smoked	0.772	0.588–1.013	0.0620
Never used	Reference	–	–
Insurance			<0.0001*
Medicaid	1.411	1.029–1.933	0.0323*
Medicare	0.571	0.481–0.679	<0.0001*
Medicare/Medicaid	0.818	0.555–1.205	0.3087
Uninsured	2.029	1.430–2.878	<0.0001*
Private	Reference	–	–
Marital status at diagnosis			<0.0001*
Divorced or separated	1.107	0.859–1.427	0.4324
Single	1.655	1.285–2.131	<0.0001*
Unknown	1.184	0.897–1.563	0.2325
Widowed	0.742	0.577–0.954	0.0199*
Married	Reference	–	–
Age at diagnosis (years)	0.964	0.957–0.971	<0.0001*
Race			<0.0001*
Black	2.538	1.960–3.286	<0.0001*
White	Reference	–	–

*, P value <0.05. OR, odds ratio; CI, confidence interval.

Table S3 Comparison of social determinants of health based on the receipt of curative intent surgery for early-stage non-small cell lung cancer (column percentage)

Variables	Receive surgery for early-stage disease?			P value
	Overall (n=1,130)	No (n=392, 34.69%)	Yes (n=738, 65.31%)	
Gender				0.6808
Female	593 (52.48)	209 (53.32)	384 (52.03)	
Male	537 (47.52)	183 (46.68)	354 (47.97)	
Cigarette use at time of diagnosis (n=697)				0.2796
Currently smoked	264 (37.88)	94 (38.84)	170 (37.36)	
Formerly smoked	292 (41.89)	107 (44.21)	185 (40.66)	
Never used	141 (20.23)	41 (16.94)	100 (21.98)	
Insurance				<0.0001*
Medicaid	66 (5.84)	21 (5.36)	45 (6.10)	
Medicare	630 (55.75)	272 (69.39)	358 (48.51)	
Medicare/Medicaid	49 (4.34)	20 (5.10)	29 (3.93)	
Private	338 (29.91)	54 (13.78)	284 (38.48)	
Uninsured	47 (4.16)	25 (6.38)	22 (2.98)	
Marital status at diagnosis (n=1,123)				<0.0001*
Divorced or separated	116 (10.33)	43 (11.05)	73 (9.95)	
Married	671 (59.75)	200 (51.41)	471 (64.17)	
Single	102 (9.08)	35 (9.00)	67 (9.13)	
Unknown	92 (8.19)	35 (9.00)	57 (7.77)	
Widowed	142 (12.64)	76 (19.54)	66 (8.99)	
Age at diagnosis (years)	66.00±10.65	70.68±9.56	63.51±10.36	<0.0001*
Race				0.0145*
Black	83 (7.35)	39 (9.95)	44 (5.96)	
White	1,047 (92.65)	353 (90.05)	694 (94.04)	

Data are presented as n (%) or mean ± standard deviation. P value comparisons across stage at diagnosis categories are based on Chi-square test of homogeneity for categorical variables; P values for continuous variables are based on the Wilcoxon Rank Sum Test. *, P value <0.05.

Table S4 Association of social determinants of health with the receipt of curative intent surgery for early-stage non-small cell lung cancer (univariable logistic regression analysis)

Covariates	OR	95% CI for OR	P value
Gender			0.6810
Male	1.053	0.824–1.346	0.6810
Female	Reference	–	–
Cigarette use at time of diagnosis			0.2815
Currently smoked	0.742	0.476–1.154	0.1850
Formerly smoked	0.709	0.459–1.095	0.1207
Never used	Reference	–	–
Insurance			<0.0001*
Medicaid	0.407	0.225–0.738	0.0031*
Medicare	0.250	0.180–0.348	<0.0001*
Medicare/Medicaid	0.276	0.145–0.523	<0.0001*
Uninsured	0.167	0.088–0.318	<0.0001*
Private	Reference	–	–
Marital status at diagnosis			<0.0001*
Divorced or separated	0.721	0.478–1.088	0.1190
Single	0.813	0.523–1.263	0.3571
Unknown	0.692	0.440–1.087	0.1099
Widowed	0.369	0.255–0.533	<0.0001*
Married	Reference	–	–
Age at diagnosis (years)	0.928	0.915–0.942	<0.0001*
Race			0.0155*
Black	0.574	0.366–0.900	0.0155*
White	Reference	–	–

*, P value <0.05. OR, odds ratio; CI, confidence interval.

Table S5 Association of social determinants of health with the receipt of radiation therapy for early-stage non-small cell lung cancer (univariable logistic regression analysis)

Covariates	OR	95% CI for OR	P value
Gender			0.3968
Male	0.900	0.706–1.148	0.3968
Female	Reference	–	–
Cigarette use at time of diagnosis			0.0081*
Currently smoked	2.007	1.283–3.141	0.0023*
Formerly smoked	1.486	0.951–2.321	0.0817
Never used	Reference	–	–
Insurance			<0.0001*
Medicaid	1.784	1.019–3.123	0.0427*
Medicare	2.123	1.580–2.852	<0.0001*
Medicare/Medicaid	1.977	1.057–3.698	0.0329*
Uninsured	5.509	2.891–10.499	<0.0001*
Private	Reference	–	–
Marital status at diagnosis			0.0054*
Divorced or separated	1.216	0.807–1.832	0.3502
Single	1.629	1.068–2.487	0.0236*
Unknown	1.154	0.732–1.821	0.5368
Widowed	1.897	1.314–2.737	0.0006*
Married	Reference	–	–
Age at diagnosis (years)	1.039	1.026–1.051	<0.0001*
Race			0.0365*
Black	1.615	1.031–2.531	0.0365*
White	Reference	–	–

*, P value <0.05. OR, odds ratio; CI, confidence interval.

Table S6 Association of social determinants of health with the receipt of systemic therapy for advanced stage non-small cell lung cancer (univariable logistic regression analysis)

Covariate	OR	95% CI for OR	P value
Gender			0.3663
Male	0.911	0.745–1.115	0.3663
Female	Reference	–	–
Cigarette use at time of diagnosis			0.6096
Currently smoked	0.888	0.627–1.257	0.5026
Formerly smoked	1.019	0.698–1.489	0.9213
Never used	Reference	–	–
Insurance			<0.0001*
Medicaid	0.660	0.458–0.950	0.0254*
Medicare	0.531	0.418–0.674	<0.0001*
Medicare/Medicaid	0.246	0.148–0.408	<0.0001*
Uninsured	0.339	0.239–0.482	<0.0001*
Private	Reference	–	–
Marital status at diagnosis			<0.0001*
Divorced or separated	0.737	0.528–1.027	0.0717
Single	0.463	0.346–0.620	<0.0001*
Unknown	0.619	0.436–0.880	0.0075*
Widowed	0.365	0.256–0.521	<0.0001*
Married	Reference	–	–
Age at diagnosis (years)	0.974	0.965–0.983	<0.0001*
Race			<0.0001*
Black	0.524	0.403–0.680	<0.0001*
White	Reference	–	–

*, P value <0.05. OR, odds ratio; CI, confidence interval.

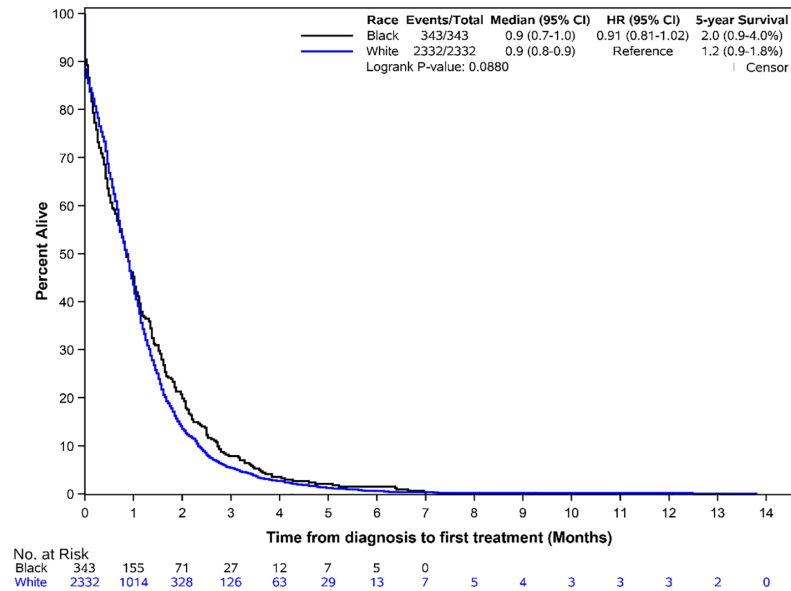


Figure S1 Kaplan-Meier estimates of 5-year overall survival from diagnosis to time of first treatment in months based on race. HR, hazard ratio; CI, confidence interval; No., number.

Table S7 Association of social determinants of health and time from diagnosis to treatment onset (univariable cox proportional hazards regression analysis)

Variables	HR	95% CI for HR	P value
Gender (n=2,678)			0.3963
Male (n=1,402)	1.033	0.958–1.115	0.3963
Female (n=1,276)	Reference	–	–
Cigarette use at time of diagnosis (n=1,607)			<0.0001*
Currently smoked (n=727)	12.856	10.456–15.808	<0.0001*
Formerly smoked (n=573)	52.806	40.957–68.082	<0.0001*
Never used (n=307)	Reference	–	–
Insurance n=2,678)			<0.0001*
Medicaid (n=225)	3.920	3.326–4.619	<0.0001*
Medicare (n=1,215)	10.868	9.473–12.469	<0.0001*
Medicare/Medicaid (n=117)	26.365	20.927–33.217	<0.0001*
Uninsured (n=210)	31.265	25.608–38.172	<0.0001*
Private (n=911)	Reference	–	–
Marital status at diagnosis (n=2,668)			<0.0001*
Divorced or separated (n=285)	3.358	2.924–3.857	<0.0001*
Single (n=326)	8.193	7.075–9.487	<0.0001*
Unknown (n=233)	14.390	12.116–17.091	<0.0001*
Widowed (n=274)	25.865	21.755–30.752	<0.0001*
Married (n=1,550)	Reference	–	–
Age at diagnosis (years) (n=2,678)	0.987	0.984–0.991	<0.0001*
Race (n=2,678)			<0.0001*
Black (n=343)	12.833	11.053–14.9	<0.0001*
White (n=2,335)	Reference	–	–
Stage at diagnosis (n=2,678)			<0.0001*
Advanced stage (n=1,558)	45.883	38.565–54.589	<0.0001*
Early stage (n=1,120)	Reference	–	–

*, P value <0.05. HR, hazard ratio; CI, confidence interval.

Table S8 Association of social determinants of health and time from diagnosis to treatment onset (multivariable cox proportional hazards regression analysis)

Variables	HR	95% CI for HR	P value
Race			0.9076
Black	1.010	0.859–1.187	0.9076
White	Reference	–	–
Cigarette use at time of diagnosis			<0.0001*
Currently smoked	2.440	2.004–2.971	<0.0001*
Formerly smoked	5.218	4.039–6.742	<0.0001*
Never used	Reference	–	–
Insurance			<0.0001*
Medicaid	1.331	1.046–1.694	0.0201*
Medicare	1.705	1.420–2.049	<0.0001*
Medicare/Medicaid	2.381	1.661–3.413	<0.0001*
Uninsured	2.041	1.592–2.618	<0.0001*
Private	Reference	–	–
Marital status at diagnosis			<0.0001*
Divorced or separated	1.131	0.955–1.341	0.1545
Single	1.248	1.033–1.509	0.0219*
Unknown	1.817	1.344–2.458	0.0001*
Widowed	2.109	1.646–2.702	<0.0001*
Married	Reference	–	–
Age at diagnosis (years)	0.992	0.986–0.998	0.0125*
Stage at diagnosis			<0.0001*
Advanced stage	12.738	10.076–16.102	<0.0001*
Early stage	Reference	–	–

*, P value <0.05. HR, hazard ratio; CI, confidence interval.

Table S9 Multivariable Cox proportional hazards regression analysis of overall survival time

Variables	HR	95% CI for HR	P value
Race			0.8320
Black	0.981	0.820–1.174	0.8320
White	Reference	–	–
Gender			0.2209
Male	1.078	0.956–1.215	0.2209
Female	Reference	–	–
Cigarette use at time of diagnosis			0.9853
Currently smoked	1.014	0.868–1.185	0.8633
Formerly smoked	1.009	0.856–1.191	0.9126
Never used	Reference	–	–
Insurance			<0.0001*
Medicaid	1.126	0.838–1.513	0.4305
Medicare	1.970	1.644–2.361	<0.0001*
Medicare/Medicaid	1.756	1.149–2.682	0.0092*
Uninsured	2.658	2.065–3.421	<0.0001*
Private	Reference	–	–
Marital status at diagnosis			0.1020
Divorced or separated	0.970	0.800–1.176	0.7588
Single	1.105	0.922–1.325	0.2780
Unknown	1.112	0.826–1.498	0.4826
Widowed	1.280	1.056–1.552	0.0120*
Married	Reference	–	–
Stage at diagnosis			<0.0001*
Advanced stage	1.672	1.446–1.934	<0.0001*
Early stage	Reference	–	–
Tumor grade			<0.0001*
Well differentiated	Reference	–	–
Moderately differentiated	28.008	17.114–45.838	<0.0001*
Poorly differentiated	329.055	181.465–596.686	<0.0001*
Undifferentiated/anaplastic	922.797	428.347–1,988.004	<0.0001*
Unknown	1,385.829	708.528–2,710.583	<0.0001*

*, P value <0.05. HR, hazard ratio; CI, confidence interval.

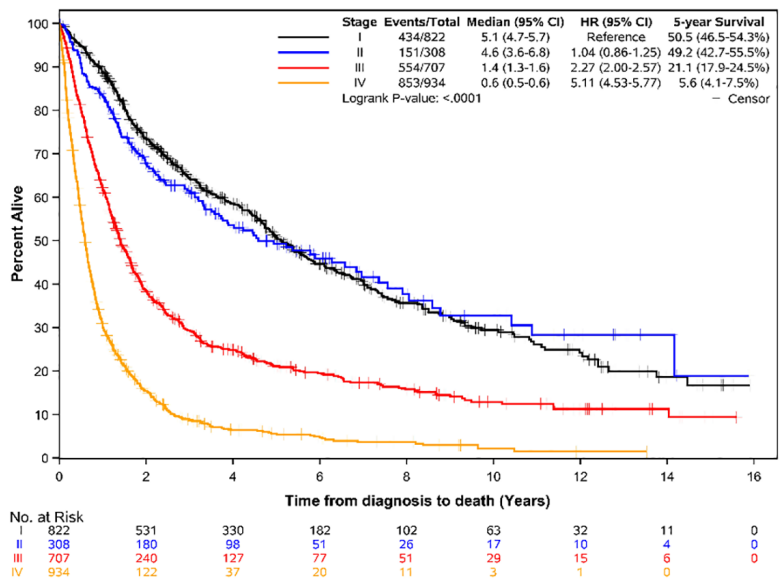


Figure S2 Kaplan-Meier estimates of 5-year overall survival based on stage. HR, hazard ratio; CI, confidence interval; No., number.

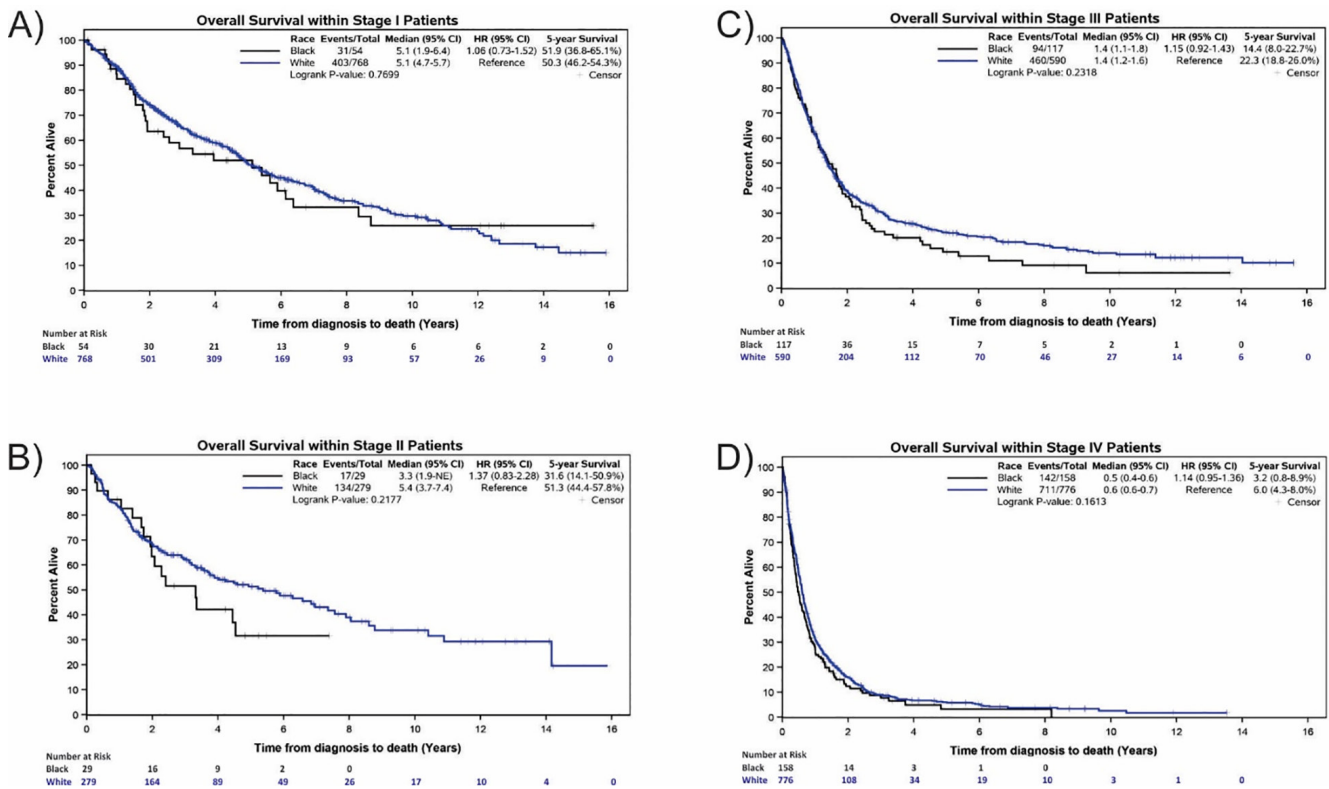


Figure S3 Kaplan-Meier estimates of 5-year overall survival based on lung cancer stage at diagnosis, stratified by race. (A) Stage I. (B) Stage II. (C) Stage III. (D) Stage IV. HR, hazard ratio; CI, confidence interval.