Supplementary Online Content

Deo SV, Motairek I, Nasir K, et al. Association between historical neighborhood redlining and cardiovascular outcomes among US veterans with atherosclerotic cardiovascular diseases. *JAMA Netw Open*. 2023;6(7):e2322727. doi:10.1001/jamanetworkopen.2023.22727

eFigure 1. CONSORT Flow Diagram Presenting Cohort Selection

eFigure 2. Distribution of the Community Deprivation Index Across HOLC Graded Census Tracts

eTable 1. Baseline Characteristics Between Patients Included and Excluded From Our Cohort Study
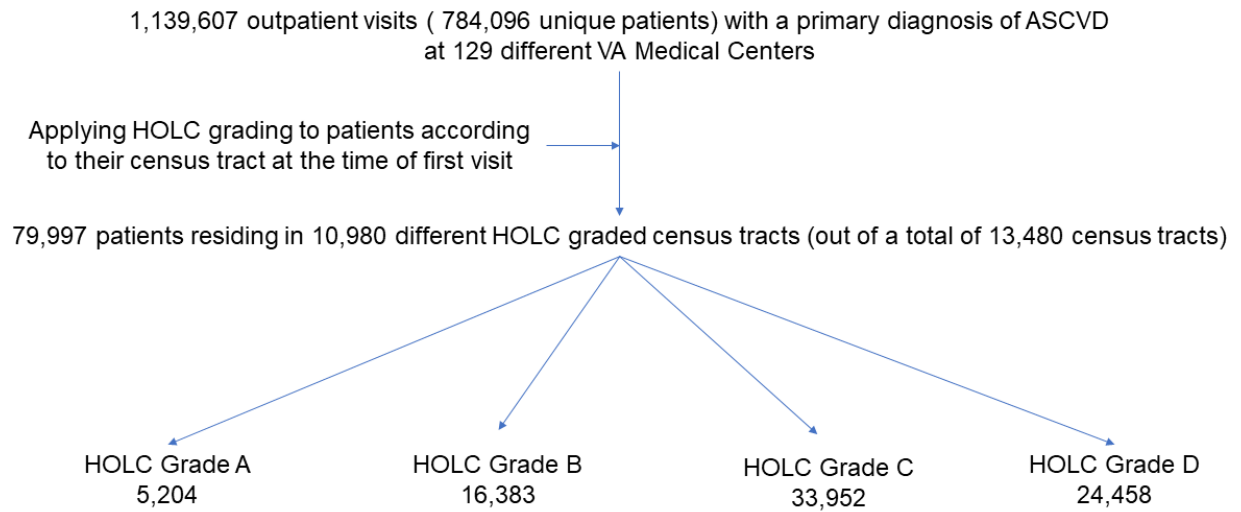
eTable 2. Complete Case Analysis

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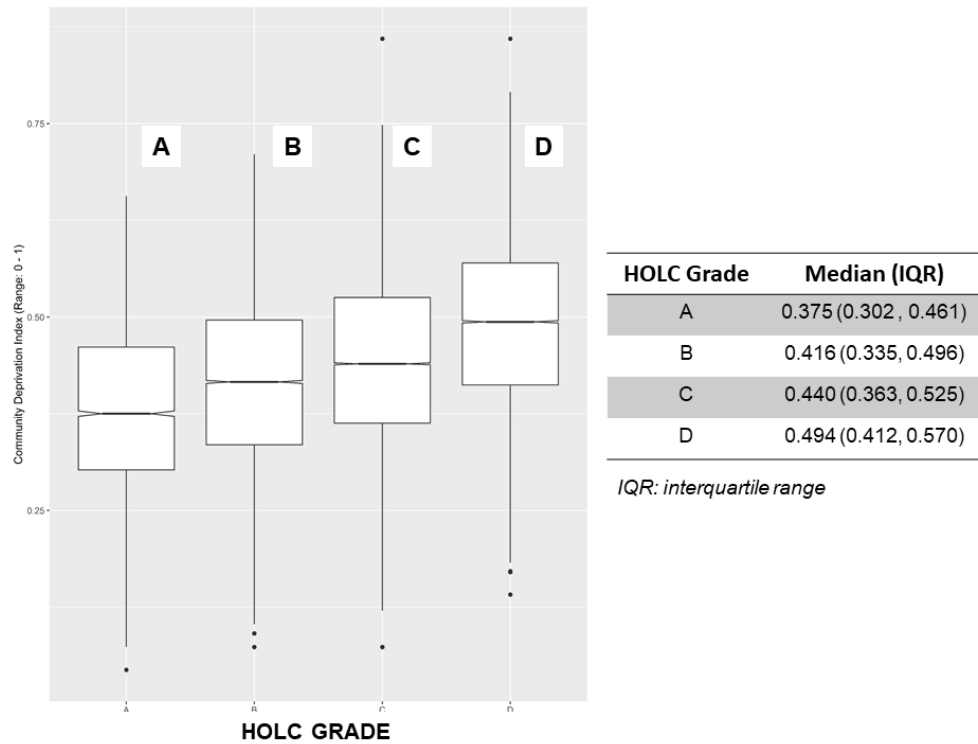
eTable 4. Subgroup Analysis of MACE According to Race and Ethnicity

This supplementary material has been provided by the authors to give readers additional information about their work.

eFigure 1. CONSORT flow diagram presenting cohort selection.

1,139,607 outpatient visits (784,096 unique patients) with a primary diagnosis of ASCVD
at 129 different VA Medical Centers

Applying HOLC grading to patients according
to their census tract at the time of first visit

79,997 patients residing in 10,980 different HOLC graded census tracts (out of a total of 13,480 census tracts)

HOLC Grade A	HOLC Grade B	HOLC Grade C	HOLC Grade D
5,204	16,383	33,952	24,458

eFigure 2. Distribution of the community deprivation index across HOLC graded census tracts

HOLC Grade	Median (IQR)
A	0.375 (0.302 , 0.461)
B	0.416 (0.335, 0.496)
C	0.440 (0.363, 0.525)
D	0.494 (0.412, 0.570)

IQR: interquartile range

HOLC=Home Owner's Loan Corporation; IQR = interquartile range

eTable 1. Baseline Characteristics between patients included and excluded from our cohort study

	Included Patients (n = 79,997)	Excluded Patients (n = 704,099)
Age (years)	74.46 (10.16)	73.94 (9.89)
Female	2.9%	4%
Race		
Asian	0.6%	0.5%
Black	37.3%	8%
Declined	4.2%	4.3%
Native	1.1%	1.5%
White	55.7%	80.1%
Unknown	1.1%	1.8%
Ethnicity		
Hispanic	5.4%	4.6%
Not Hispanic	91.8%	91.8%
Unknown	2.7%	2.9%
Community deprivation index (Range: 0 – 1)	0.44 (0.11)	0.50 (0.26)
Hypertension	83%	83%
Diabetes	48%	47%

Heart Failure	14.2%	12%
Atrial Fibrillation	16.6%	18.1%
Chronic Obstructive Pulmonary Disease	21%	21.2%
Prior Myocardial Infarction	3%	3.4%
Prior Percutaneous Coronary Intervention	2.6%	3%
Systolic Blood Pressure (mmHg)	134.81 (20.79)	133.40 (19.68)
Diastolic Blood Pressure (mmHg)	75.01 (11.93)	74.26 (11.12)
Low-Density Lipoprotein Cholesterol (mg/dL)	87.15 (34.56)	89.23 (38.01)

eTable 2. Complete case analysis

As a sensitivity analysis, we also fit the fully adjusted model as a complete case analysis without imputation. We observed that this did not change our primary findings using the imputed data sets.

HOLC Grade (Ref: Grade A)	Hazard Ratio (95% Confidence interval)	p-value
B	0.96 (0.91, 1.01)	0.18
C	0.98 (0.93, 1.03)	0.50
D	1.06 (1.00, 1.12)	0.02

HOLC=Home Owner's Loan Corporation

eTable 3. The association between HOLC grade and cardiovascular outcomes

	Model 1	Model 2	Model 3
	Sub-distribution Hazard ratio (95% confidence interval)		
Myocardial Infarction (Ref. category HOLC-A)			
HOLC B	1.078 (0.950, 1.222), P=0.24	1.043 (0.918, 1.184), P=0.51	0.980 (0.861,1.116); p = 0.76
HOLC C	1.112 (0.987, 1.253), P=0.08	1.058 (0.937, 1.194), P=0.35	0.966 (0.853,1.093); p = 0.58
HOLC D	**1.310 (1.161, 1.478), P< 0.001**	**1.230 (1.088, 1.391), P< 0.001**	**1.148(1.011, 1.303); p = 0.03**
Stroke (Ref. category: HOLC-A)			
HOLC B	0.958 (0.623, 1.463), P=0.83	0.867 (0.564, 1.330), P=0.51	0.793 (0.523,1.221; p = 0.30
HOLC C	0.946 (0.630, 1.420), P=0.78	0.842 (0.560, 1.265), P=0.4	0.754 (0.505, 1.128); p = 0.17
HOLC D	1.089 (0.724, 1.638), P=0.68	0.952 (0.632, 1.434), P=0.81	0.889 (0.584, 1.353); p = 0.58
Major Adverse Limb Event (Ref. category: HOLC-A)			
HOLC B	1.013 (0.625, 1.640), P=0.95	0.921 (0.563, 1.502), P=0.74	Could not be reported as the regression model failed to converge
HOLC C	1.534 (0.982, 2.396), P=0.06	1.376 (0.872, 2.168), P=0.16	
HOLC D	1.534 (0.977, 2.408), P=0.06	1.328 (0.834, 2.113), P=0.23	

Model 1 = unadjusted; Model 2 = adjusted for age, sex, race, ethnicity; Model 3 = adjusted for age, sex, race, ethnicity, diabetes, COPD, hypertension, atrial fibrillation, heart failure, baseline LDL, prior MI, prior PCI, obesity, chronic kidney disease, and the community deprivation index

HOLC=Home Owner's Loan Corporation

eTable 4. Subgroup analysis of MACE according to race and ethnicity

Subgroup	HOLC Grade	HR	p-value
White	B vs A	0.98 (0.92, 1.04)	0.61
	C vs A	0.98 (0.93, 1.05)	0.71
	D vs A	1.10 (1.03, 1.05)	0.003
Black	B vs A	0.91 (0.82, 1.00)	0.06
	C vs A	0.96 (0.87, 1.05)	0.40
	D vs A	1.00 (0.91, 1.09)	0.97
Hispanic	B vs A	0.83 (0.64, 1.09)	0.18
	C vs A	0.88 (0.69, 1.13)	0.33
	D vs A	1.01 (0.79, 1.29)	0.88
Not Hispanic	B vs A	0.97 (0.92, 1.02)	0.24
	C vs A	0.98 (0.93, 1.03)	0.49
	D vs A	1.05 (1.00, 1.10)	0.04

HOLC=Home Owner's Loan Corporation; HR=hazard ratio