Heart Failure in Black Americans: Differences and Disparities

Heart Health Equity Learning Series
Wisconsin Heart Health Alliance

Alanna A. Morris MD, MSc, FHFSA, FACC, FAHA

Associate Professor of Medicine

Director of Heart Failure Research

Associate Fellowship Director, Clinical Investigator Track

Advanced Heart Failure and Transplant/LVAD

Emory Clinical Cardiovascular Research Institute

EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

Department
of Medicine

Disclosures

- Research Grants: NHLBI, AHRQ, Woodruff Foundation, Association of Black Cardiologists

- Consultant: Abbott, Acorai, Bayer, Boehringer-Ingelheim, Cytokinetics, Edwards Lifesciences, Ionis

- Ownership Interest: Gilead Sciences, Inc

Learning Objectives

At the end of this session, learners should be able to:

- Understand race-ethnic disparities in heart failure risk and clinical outcomes

- Understand how structural racism and bias place patients of self-reported Black race at higher risk for adverse outcomes

- Understand how clinicians contribute to healthcare disparities and targets for improving quality of care for patients with heart failure
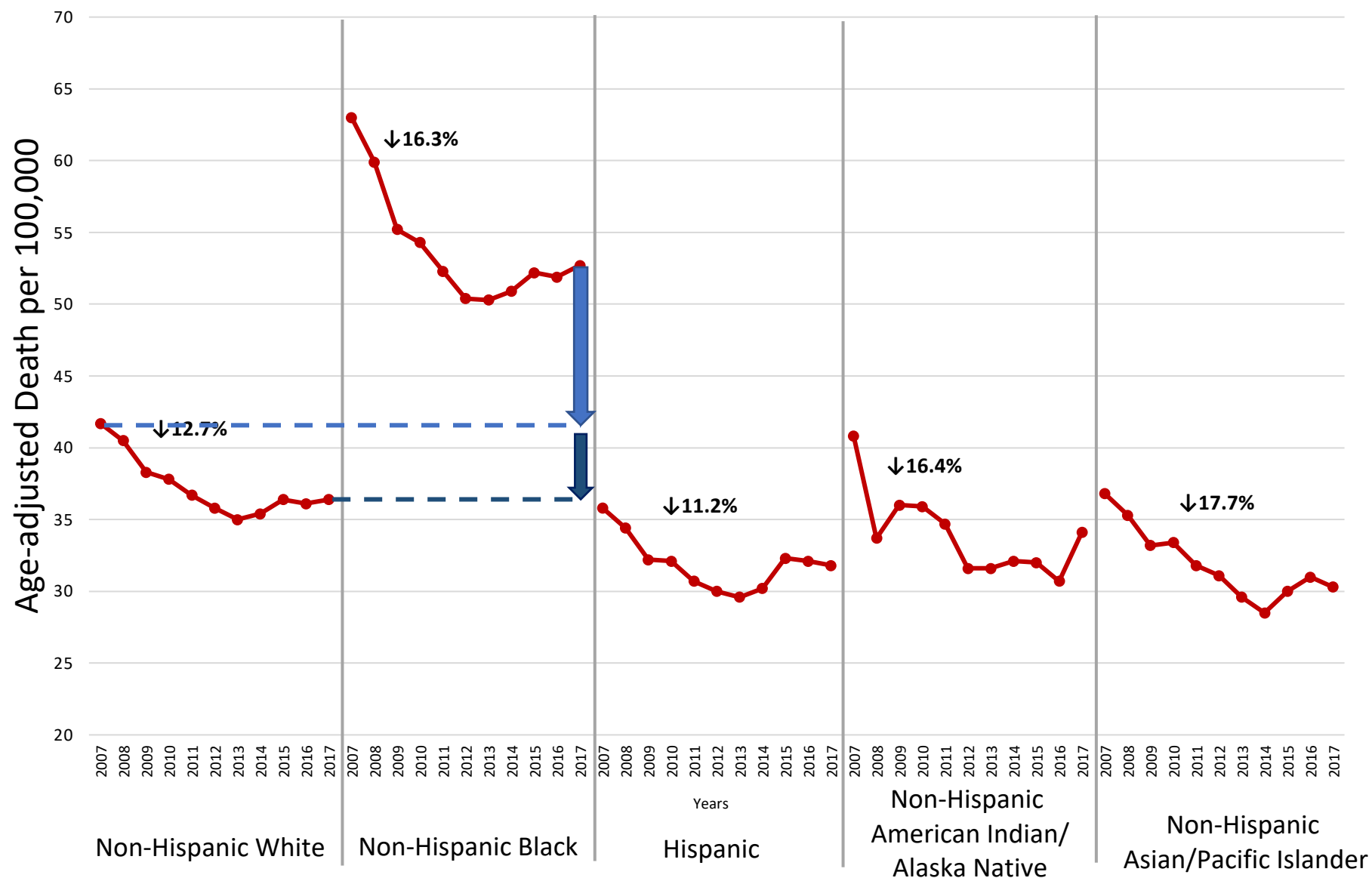
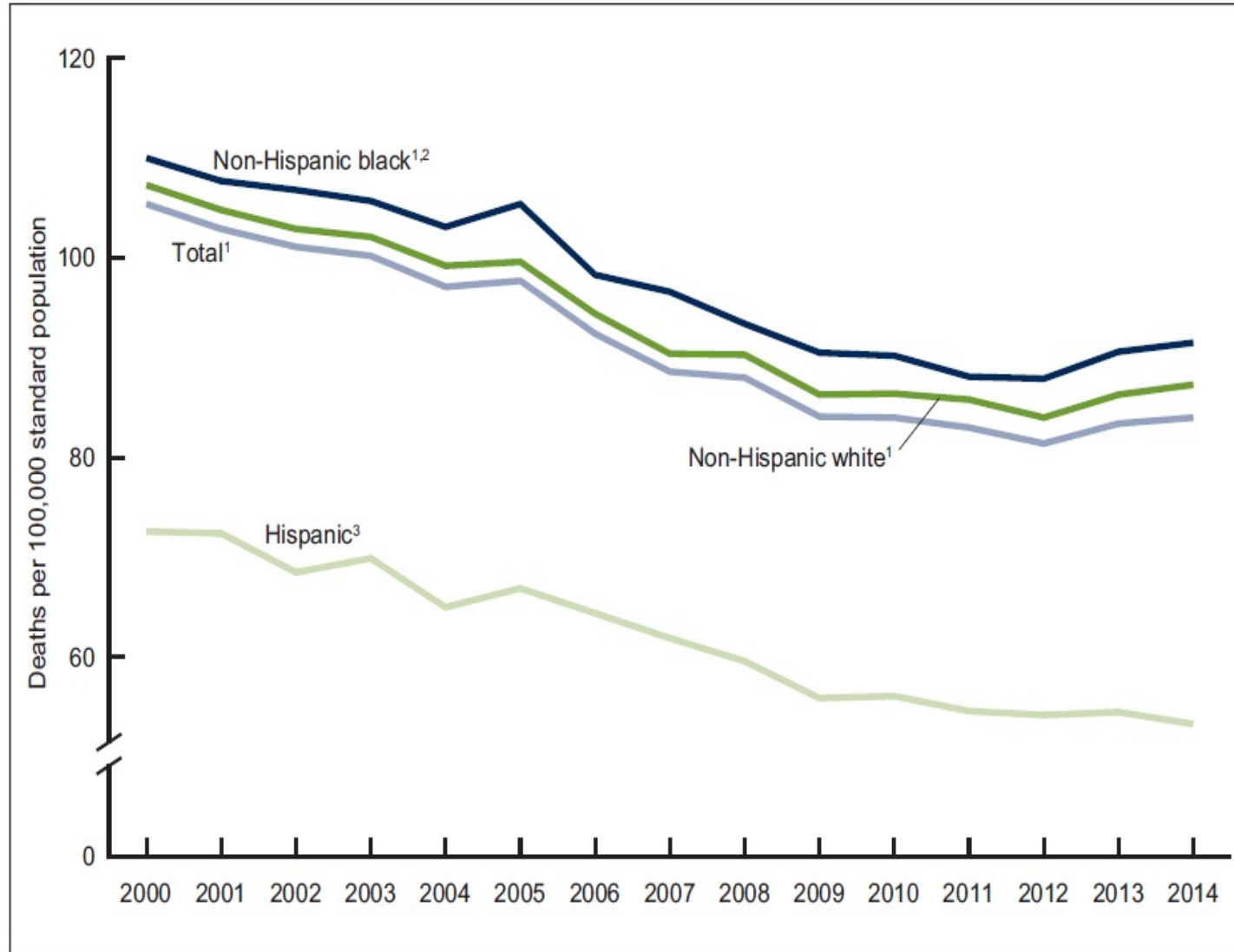Age-Adjusted **Total CVD** Mortality Rates 2007-2017 by Race and Ethnicity
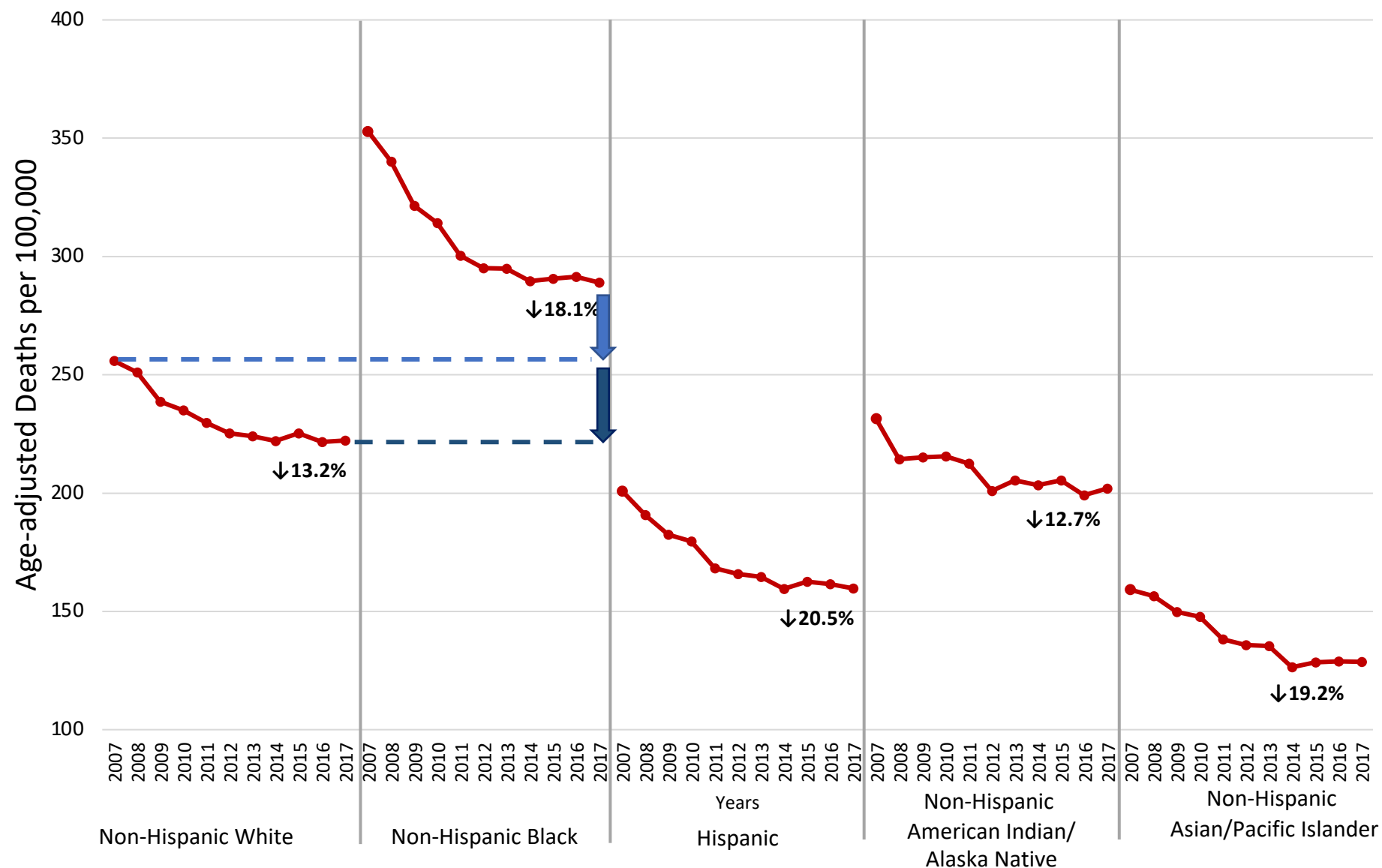
Source NCVHS: ICD-10: I00-I99, Q20-Q28

Age-Adjusted **Stroke** Mortality Rates 2007-2017 by Race and Ethnicity

Source: NCHVS ICD-10: I60-I69

Total HF Mortality Rates
2000-2014 by Race and Ethnicity

Black Americans have a higher incidence and prevalence of HF

- Annual incidence of HF in Black Americans is 9.1 per 1,000 person years compared to 6 per 1,000 person years in White Americans

- Prevalence of HF is higher for Black men (3.5%) and Black women (3.9%) compared to other race-ethnic groups (2.2%)

- Earlier age of onset – in CARDIA cohort, new onset HF before age 50 was 20X more common in Black participants as compared to White participants

- Higher risks of hospitalization and death after HF diagnosis

Virani et al. Circulation 2020
Heidenreich et al. Circulation HF 2013
Bibbons-Domingo et al. NEJM 2009

EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

Department of Medicine

Targets for improving racial HF disparities using the framework of the social-ecological model

PUBLIC POLICY

COMMUNITY

ORGANIZATIONAL

INTERPERSONAL

INDIVIDUAL

- Broaden insurance coverage
- Improve financial access to novel medical therapies with better efficacy
- Modification of the HRRP to incorporate social determinants of risk for hospital readmissions
- Prioritize funding for health disparities research

- Improve access to healthy foods
- Improve access to cardiac rehabilitation and facilities to increase physical activity
- Increase greenspace

- Prevention and management of CV risk factors
- Improved adherence to and prescription of GDMT
- Appropriate use of precision medicine
- Improved participation in research and clinical trials
- Patient-centered education to facilitate shared-decision making with providers about medication costs, device therapies, etc.

- Appropriate family-based counseling to identify presence or rare genetic variants (DCM, HCM, aTTR)
- Improved social support for advanced HF therapies

- Mandatory implicit bias training for clinicians
- Improved use of precision medicine (i.e. genetic screening, etc)
- Use eEMR to facilitate automated cardiology consultation and medication prescription for patients with high risk clinical features

EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

Department of Medicine

Burden of Traditional CV Risk Factors by Race-Ethnic Groups in the US

Population Group	Hypertension[1]	Diabetes Mellitus[1]	Overweight or Obese[1]	Ideal CV Health Metrics[8]
Total (both sexes)	46%	9.8%	69.9%	8.1 (7.8–8.3)
NH White				
Males	48.2%	9.4%	73.6%	8.02 (7.73–8.30)
Females	41.3%	7.3%	64.3%	8.39 (8.08–8.70)
NH Black				
Males	58.6%	14.7%	69.1%	7.54 (7.17–7.91)
Females	56.0%	13.4%	79.5%	7.47 (7.09–7.84)
Hispanic				
Males	47.4%	15.1%	80.8%	7.51 (6.91–8.11)
Females	40.8%	14.1%	77.8%	7.68 (7.36–8.00)
NH Asian				
Males	46.4%	12.8%	48.8%	NR
Females	36.4%	9.9%	36.3%	NR

Nayak, Hicks and Morris. Circ HF 2020

COMPARISON OF HF STAGES ACROSS COMMUNITY COHORTS

■ Stage 0   ■ Stage A   ■ Stage B   ■ Stage C/D
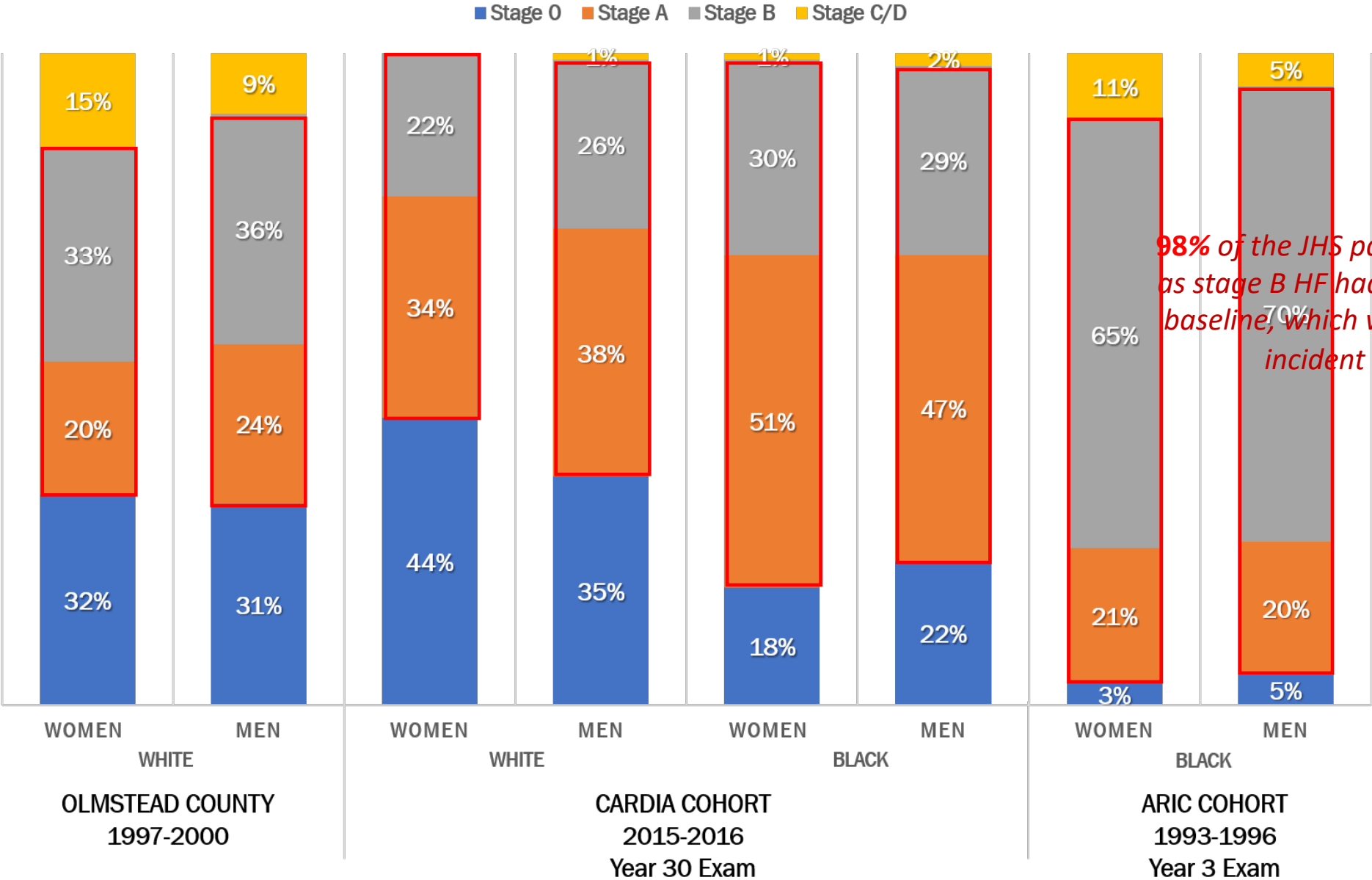
98% *of the JHS participants classified as stage B HF had evidence of LVH at baseline, which was a risk factor for incident HF and CVD*

OLMSTEAD COUNTY
1997-2000

CARDIA COHORT
2015-2016
Year 30 Exam

ARIC COHORT
1993-1996
Year 3 Exam

Okoh A & Morris AA, JAHA 2021

Racial Discrimination is Associated with Incident Hypertension
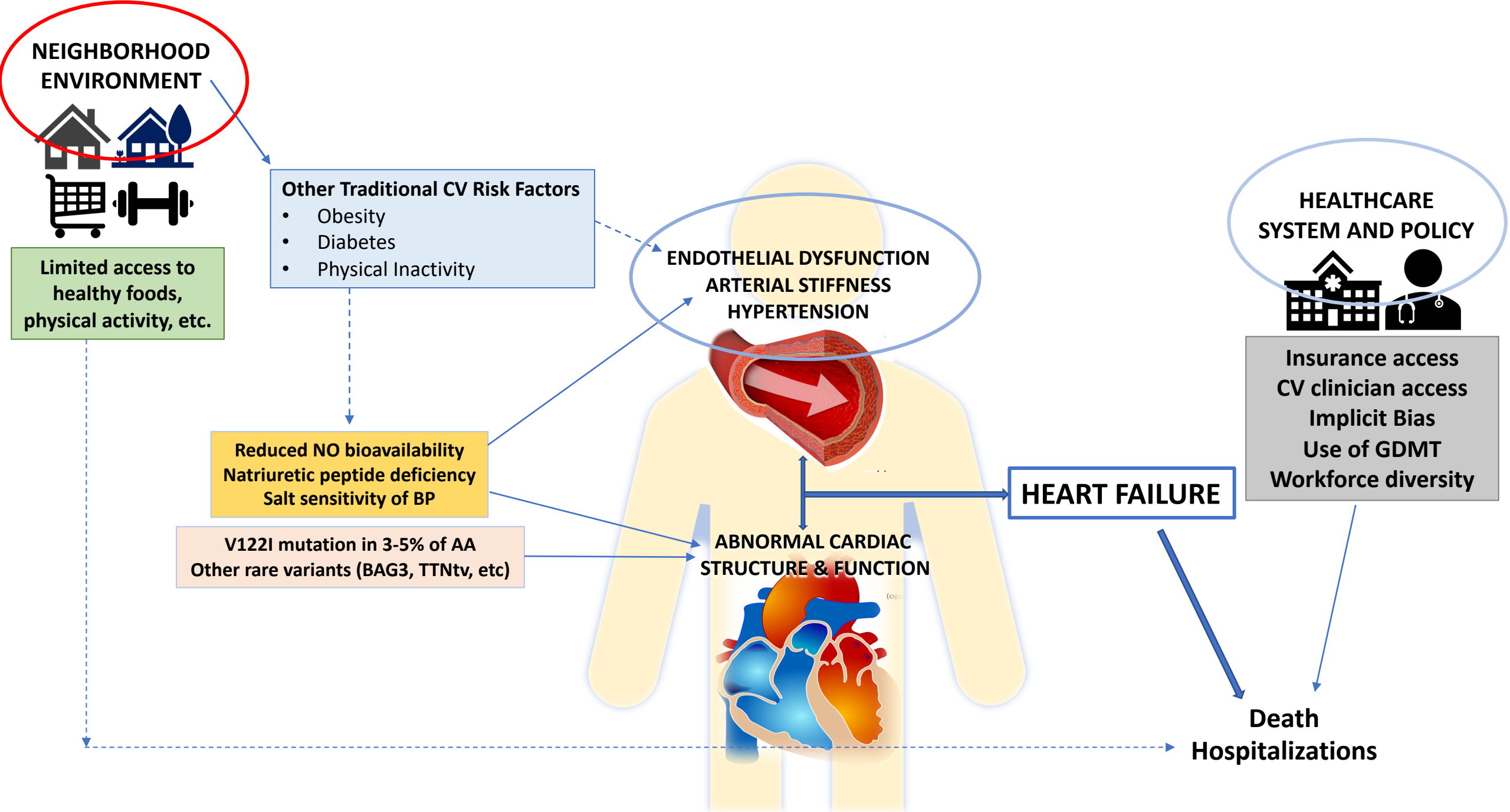
N=1845
JHS

Table 4. HRs of Incident Hypertension by Categories of Discrimination Among JHS Participants

	Model 1* HR (95% CI)			Model 2† HR (95% CI)		
	Overall	Women	Men	Overall	Women	Men
Everyday discrimination						
Low: 1.00–1.56 (ref)	1.00	1.00	1.00	1.00	1.00	1.00
Medium: 1.66–2.44	1.09 (0.93–1.28)	1.16 (0.95–1.41)	1.00 (0.76–1.31)	1.08 (0.92–1.26)	1.06 (0.85–1.32)	1.10 (0.80–1.53)
High: 2.55–6.89	1.07 (0.90–1.26)	0.96 (0.77–1.18)	1.27 (0.98–1.66)	1.02 (0.86–1.20)	0.85 (0.67–1.08)	1.31 (0.95–1.81)
Lifetime discrimination						
Low: 0.00–0.00 (ref)	1.00	1.00	1.00	1.00	1.00	1.00
Medium: 1.00–2.00	1.47 (1.16–1.85)	1.67 (1.24–2.25)	1.19 (0.81–1.76)	1.49 (1.18–1.89)	1.73 (1.29–2.34)	1.10 (0.74–1.63)
High: 3.00–9.00	1.38 (1.10–1.72)	1.51 (1.13–2.02)	1.20 (0.84–1.72)	1.34 (1.07–1.68)	1.47 (1.10–1.96)	1.09 (0.76–1.56)
Stress from lifetime discrimination						
Not stressful/moderately stressful (ref)	1.00	1.00	1.00	1.00	1.00	1.00
Very stressful	1.19 (1.01–1.40)	1.21 (0.99–1.47)	1.13 (0.84–1.53)	1.14 (0.97–1.35)	1.16 (0.95–1.42)	1.18 (0.88–1.60)

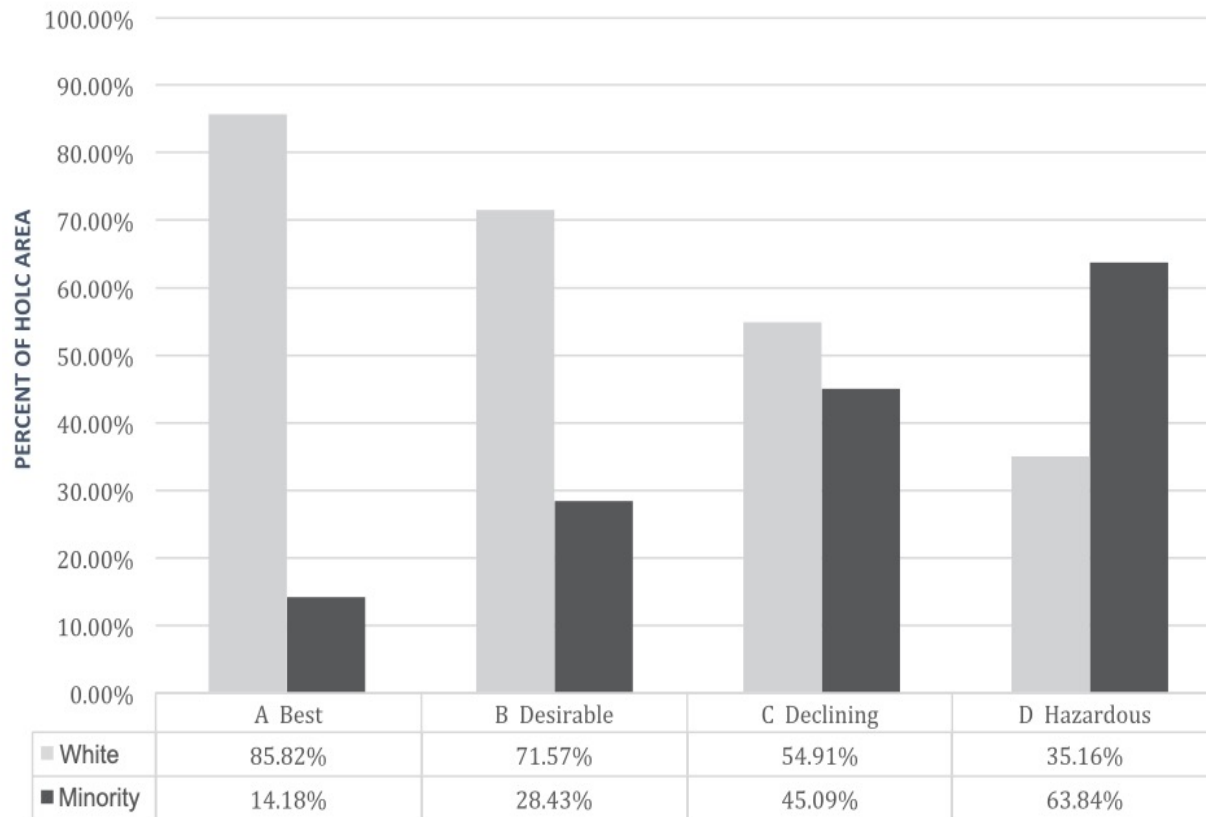BMI indicates body mass index; HR, hazard ratio; and JHS, Jackson Heart Study.
*Model 1: Adjusted for age, gender, education, income, and occupation.
†Model 2: Adjusted for model 1 + BMI, smoking, alcohol, diet, and physical activity.
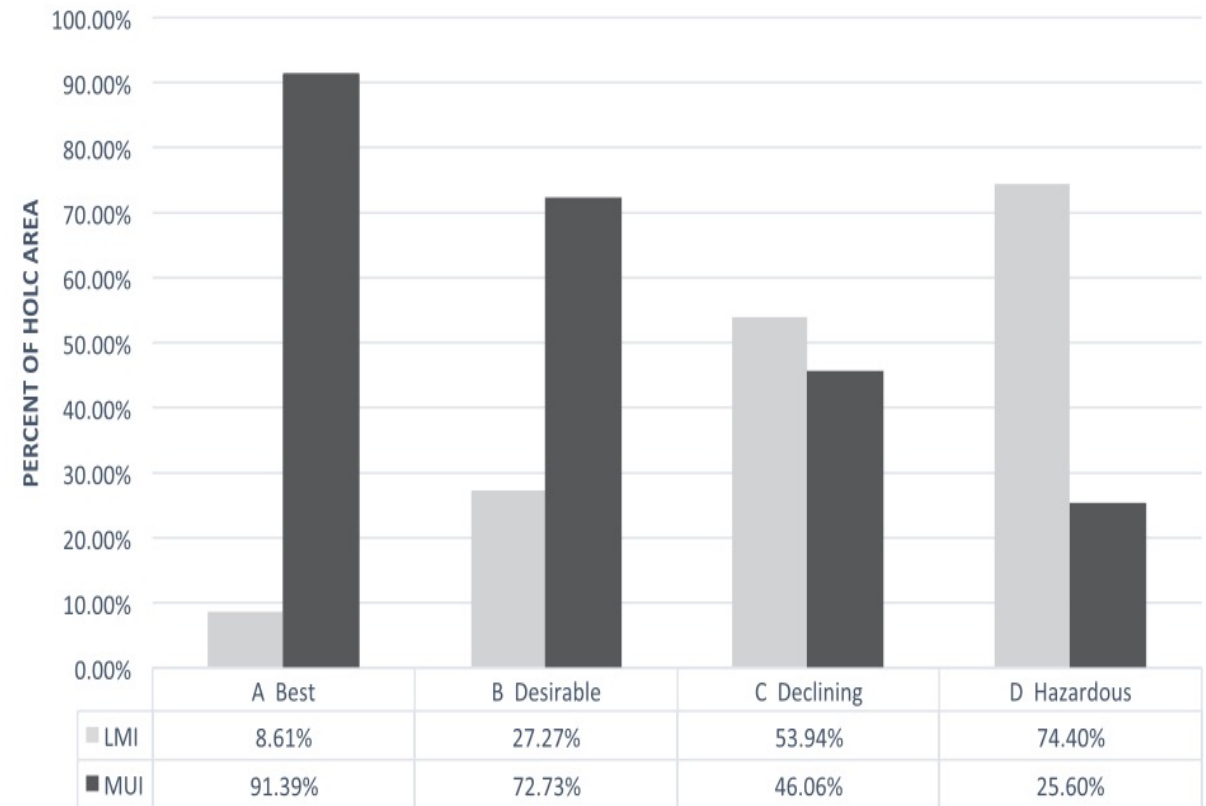
Forde et al. Hypertension 2020

NEIGHBORHOOD ENVIRONMENT

Limited access to healthy foods, physical activity, etc.

Other Traditional CV Risk Factors
- Obesity
- Diabetes
- Physical Inactivity

ENDOTHELIAL DYSFUNCTION ARTERIAL STIFFNESS HYPERTENSION

Reduced NO bioavailability
Natriuretic peptide deficiency
Salt sensitivity of BP

V122I mutation in 3-5% of AA
Other rare variants (BAG3, TTNtv, etc)

ABNORMAL CARDIAC STRUCTURE & FUNCTION

HEART FAILURE

HEALTHCARE SYSTEM AND POLICY

Insurance access
CV clinician access
Implicit Bias
Use of GDMT
Workforce diversity

Death Hospitalizations

Nayak, Hicks and Morris. Circ HF 2020

The Effects of Redlining Persist...

National HOLC Grades and Race

	A Best	B Desirable	C Declining	D Hazardous
White	85.82%	71.57%	54.91%	35.16%
Minority	14.18%	28.43%	45.09%	63.84%

National HOLC Grades and Income

	A Best	B Desirable	C Declining	D Hazardous
LMI	8.61%	27.27%	53.94%	74.40%
MUI	91.39%	72.73%	46.06%	25.60%

Original 1935-1940 HOLC maps and 2016 FFIEC Census- and ACS-derived data on income

SCHOOL OF
MEDICINE

Department of Medicine

The Effects of Redlining Persist…

The Effects of Redlining Persist...

Nationwide Supermarket Availability
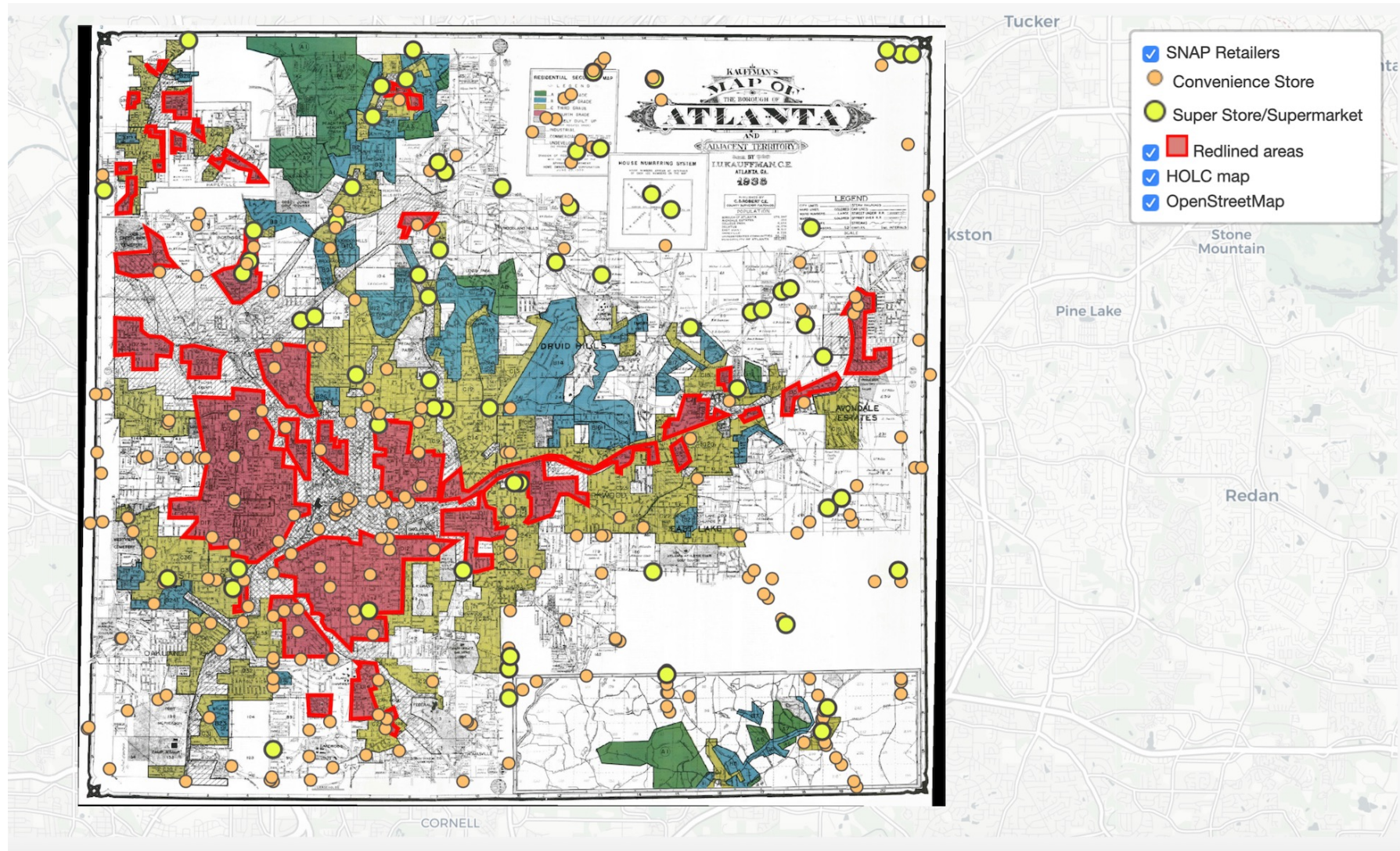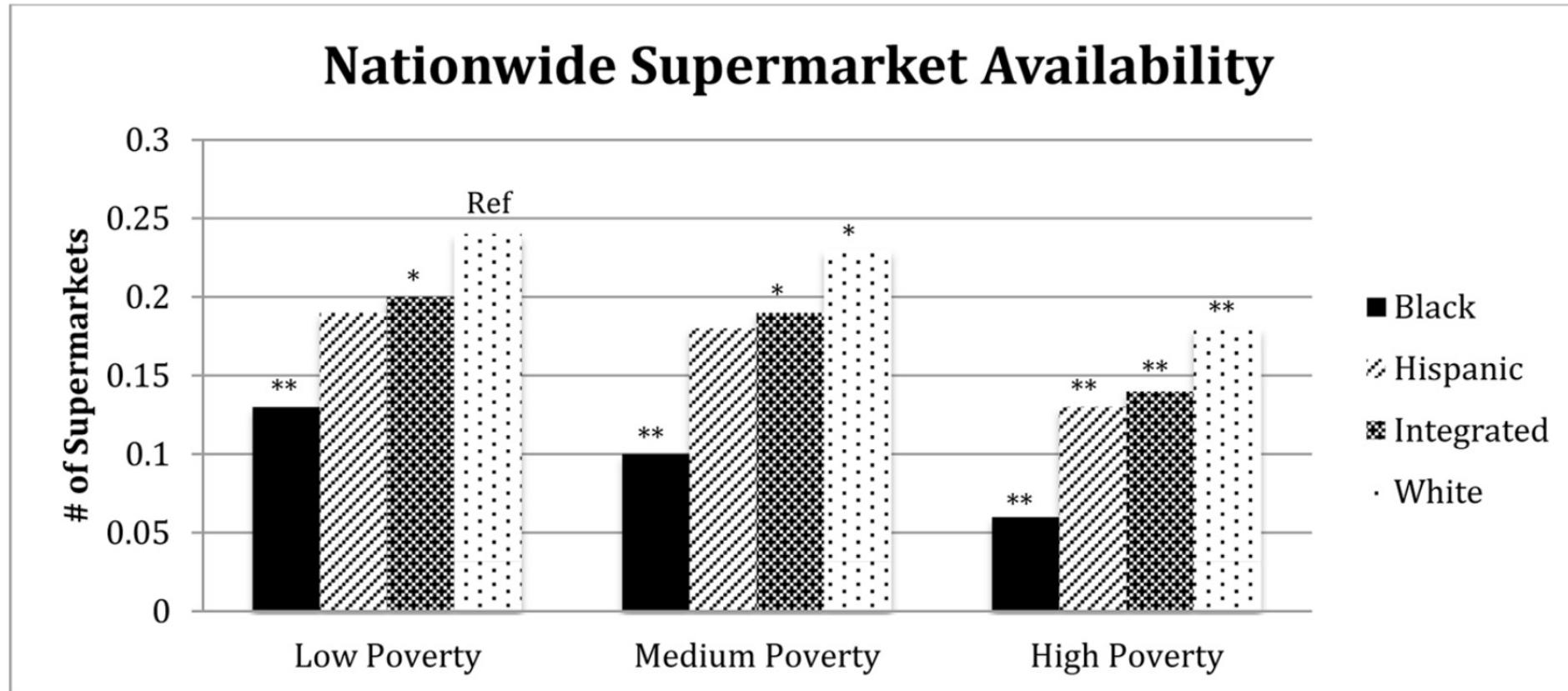
At equal poverty levels, Black neighborhoods have the fewest supermarkets

Bower et al. Am J Prev Med 2015

The Effects of Redlining Persist...

Neighborhoods with more Black and Hispanic residents, and more low income residents are less likely to have a facility for exercise

	Relative probability of not having a park	Relative probability of not having a facility
	Adjusted for area, tract population, and site	Adjusted for area, tract population, and site
Tract race/ethnicity		
• White	1.00	1.00
• Hispanic	0.95 (0.55 – 1.63)	8.60 (4.48 – 16.51)
• Hispanic/Black	0.41 (0.22 – 0.76)	6.67 (3.52 – 12.64)
• Black	0.69 (0.45 – 1.06)	3.27 (2.11 – 5.07)
• Mixed	1.18 (0.65 – 2.13)	2.27 (1.24 – 4.14)
Tract median income		
• Wealthiest	1.00	1.00
• Moderate	0.73 (0.49 – 1.08)	2.74 (1.84 – 4.09)
• Poorest	0.73 (0.48 – 1.11)	4.52 (2.87 – 7.12)

EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

Department of Medicine

Increasing Residential Segregation is Associated with Increased Risk of Incident CVD in Black Americans
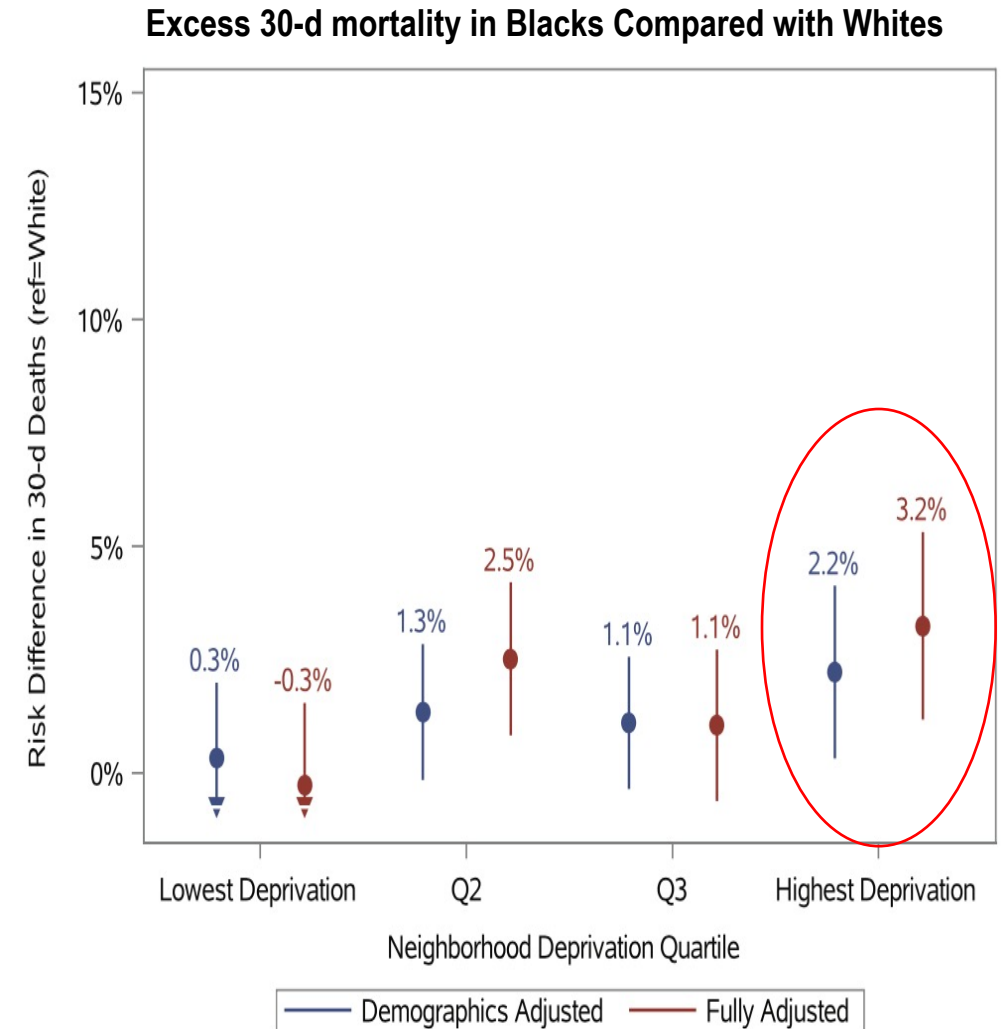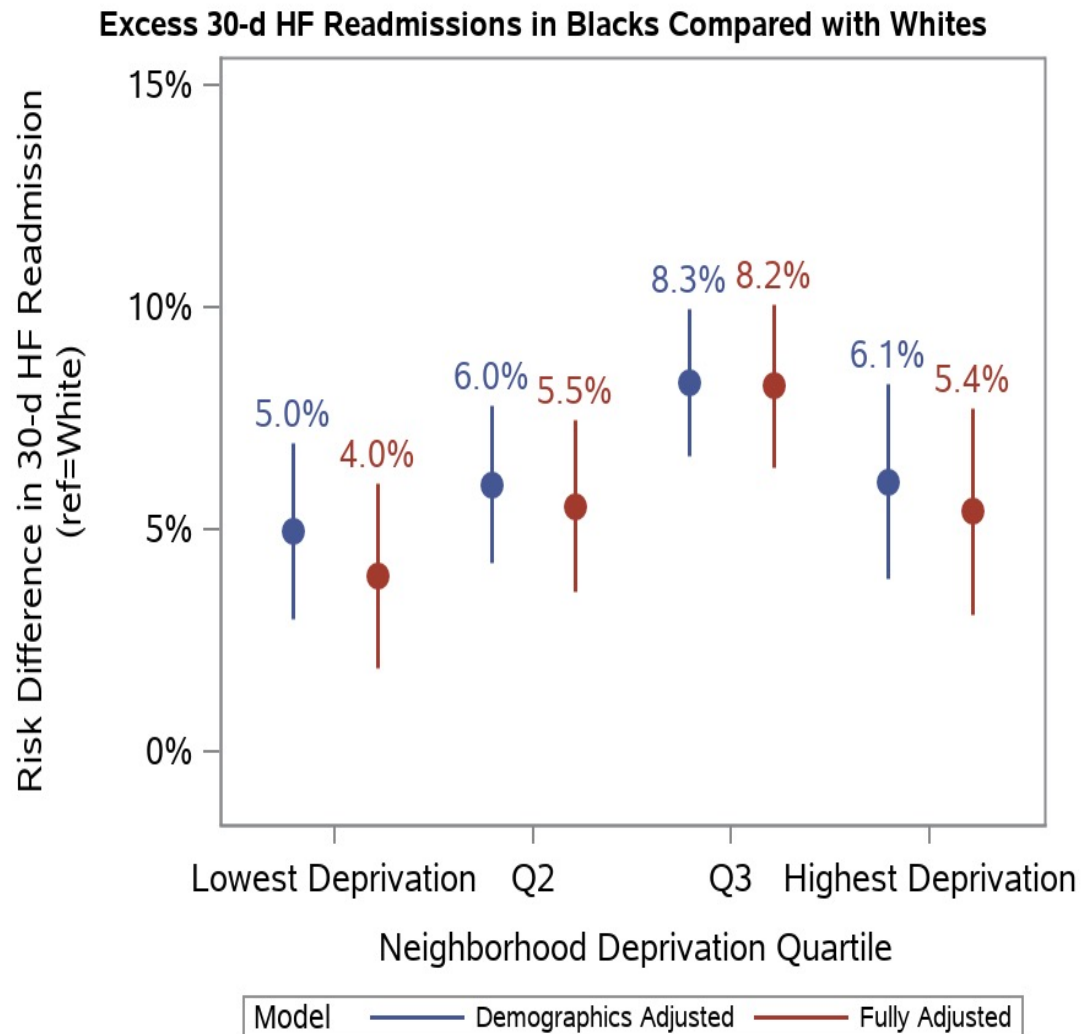
N=5,229 participants in MESA

1595 NH-Black, 2345 NH-White, 1289 Hispanic adults 45–84 years free of CVD at baseline

Table 3. Adjusted Hazard Ratios of Cardiovascular Disease and Coronary Heart Disease (and 95% Confidence Intervals) Associated With Each Standard Deviation Increase in Baseline Racial/Ethnic Residential Segregation

	No. of Events	Model 1*	Model 2†	Model 3‡	Model 4§
Incident cardiovascular disease					
Blacks	136	1.12 (1.02–1.22)	1.12 (1.02–1.23)	1.11 (1.02–1.22)	1.12 (1.02–1.23)
Hispanics	120	1.00 (0.95–1.05)	1.00 (0.94–1.08)	1.00 (0.93–1.08)	1.01 (0.94–1.08)
Whites	241	0.88 (0.81–0.96)	0.91 (0.81–1.02)	0.91 (0.81–1.01)	0.92 (0.82–1.02)
Incident coronary heart disease					
Blacks	55	1.18 (1.05–1.33)	1.16 (1.02–1.31)	1.15 (1.02–1.30)	1.17 (1.03–1.32)
Hispanics	60	1.03 (0.95–1.12)	1.03 (0.91–1.16)	1.03 (0.92–1.15)	1.03 (0.91–1.16)
Whites	103	0.88 (0.79–0.99)	0.94 (0.80–1.10)	0.94 (0.81–1.09)	0.96 (0.82–1.13)

EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

Department of Medicine

Risk of 30-d HF Readmission by Race at Emory

Patel, Morris et al. Circulation HF 2020

Racial Inequities in Access to Specialized Inpatient Heart Failure Care

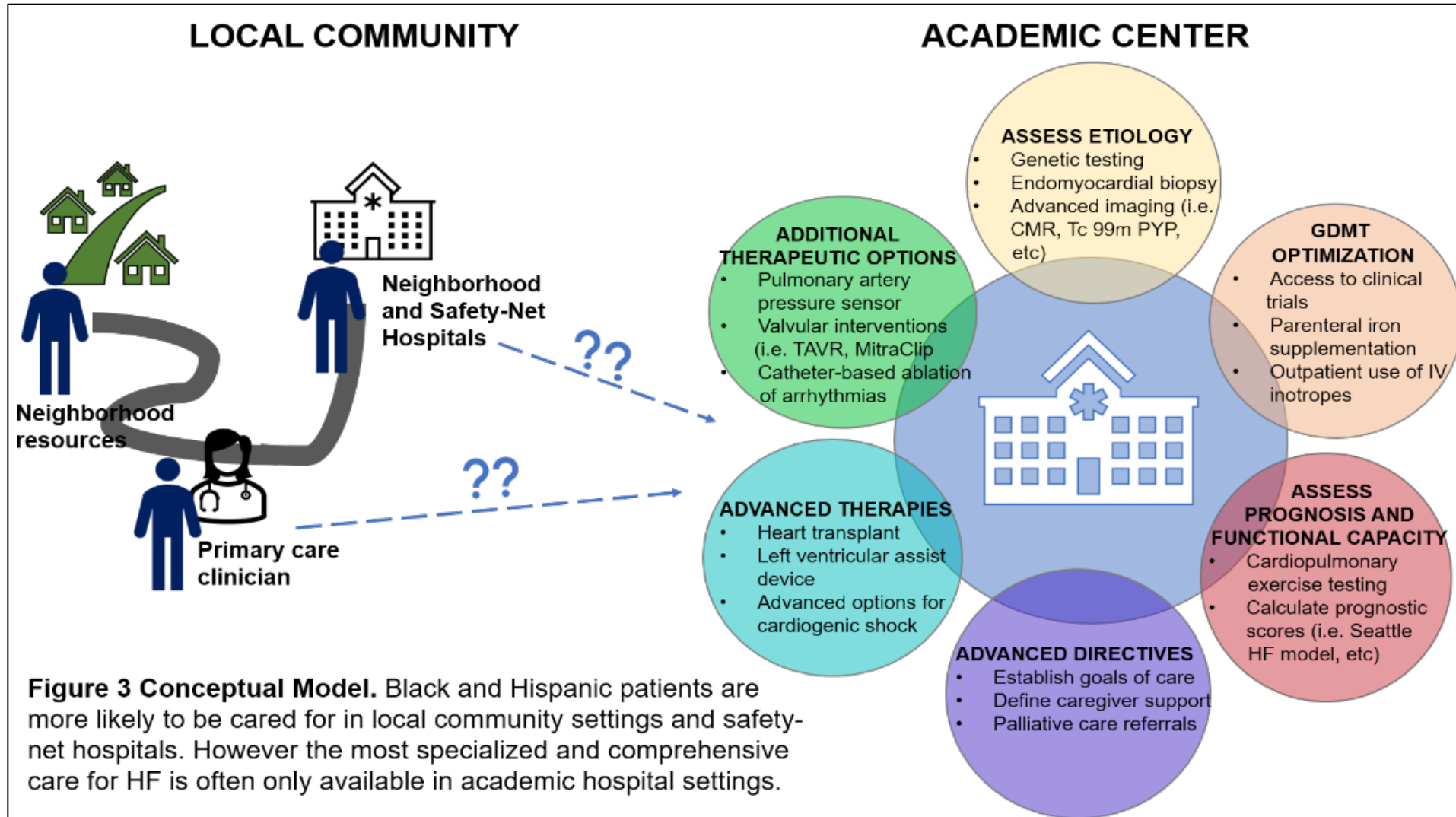**N=106,119 hospitalizations in NIS among patients over age 65**
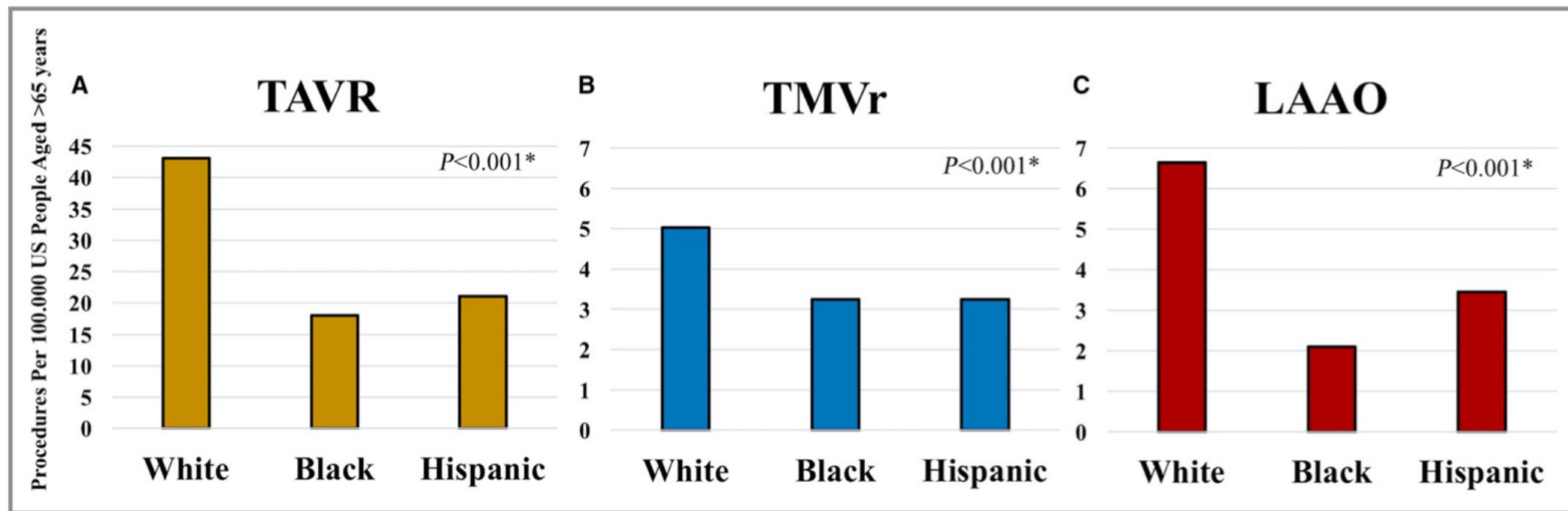
TAVR = transcatheter aortic valve replacement
TMVR = transcatheter mitral valve repair
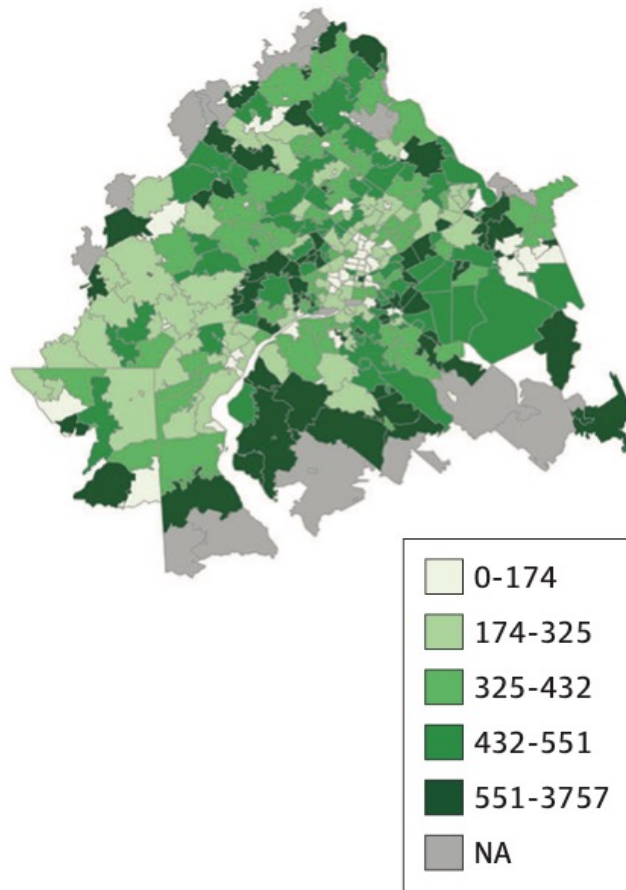LAAO = left atrial appendage occlusion

Alkhouli et al. JAHA 2019

Racial Inequities in Access to Specialized Heart Failure Care

LOCAL COMMUNITY

Neighborhood and Safety-Net Hospitals

Neighborhood resources

Primary care clinician

ACADEMIC CENTER

ASSESS ETIOLOGY
- Genetic testing
- Endomyocardial biopsy
- Advanced imaging (i.e. CMR, Tc 99m PYP, etc)

ADDITIONAL THERAPEUTIC OPTIONS
- Pulmonary artery pressure sensor
- Valvular interventions (i.e. TAVR, MitraClip
- Catheter-based ablation of arrhythmias

GDMT OPTIMIZATION
- Access to clinical trials
- Parenteral iron supplementation
- Outpatient use of IV inotropes

ADVANCED THERAPIES
- Heart transplant
- Left ventricular assist device
- Advanced options for cardiogenic shock

ASSESS PROGNOSIS AND FUNCTIONAL CAPACITY
- Cardiopulmonary exercise testing
- Calculate prognostic scores (i.e. Seattle HF model, etc)

ADVANCED DIRECTIVES
- Establish goals of care
- Define caregiver support
- Palliative care referrals

Figure 3 Conceptual Model. Black and Hispanic patients are more likely to be cared for in local community settings and safety-net hospitals. However the most specialized and comprehensive care for HF is often only available in academic hospital settings.
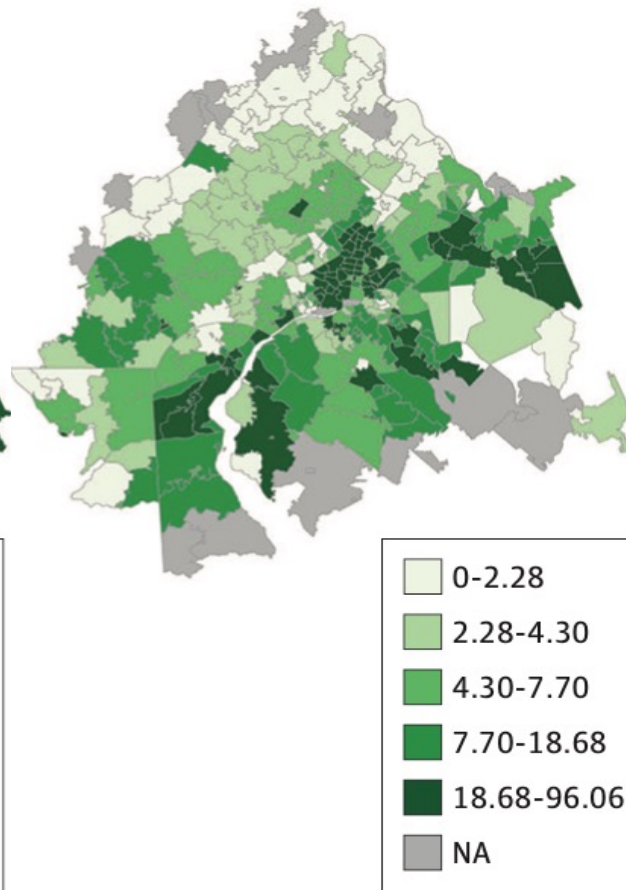
EMORY UNIVERSITY SCHOOL OF MEDICINE

Department of Medicine

Lower Rates of TAVR in Zip Codes with Greater Proportion of Black and Hispanic Patients
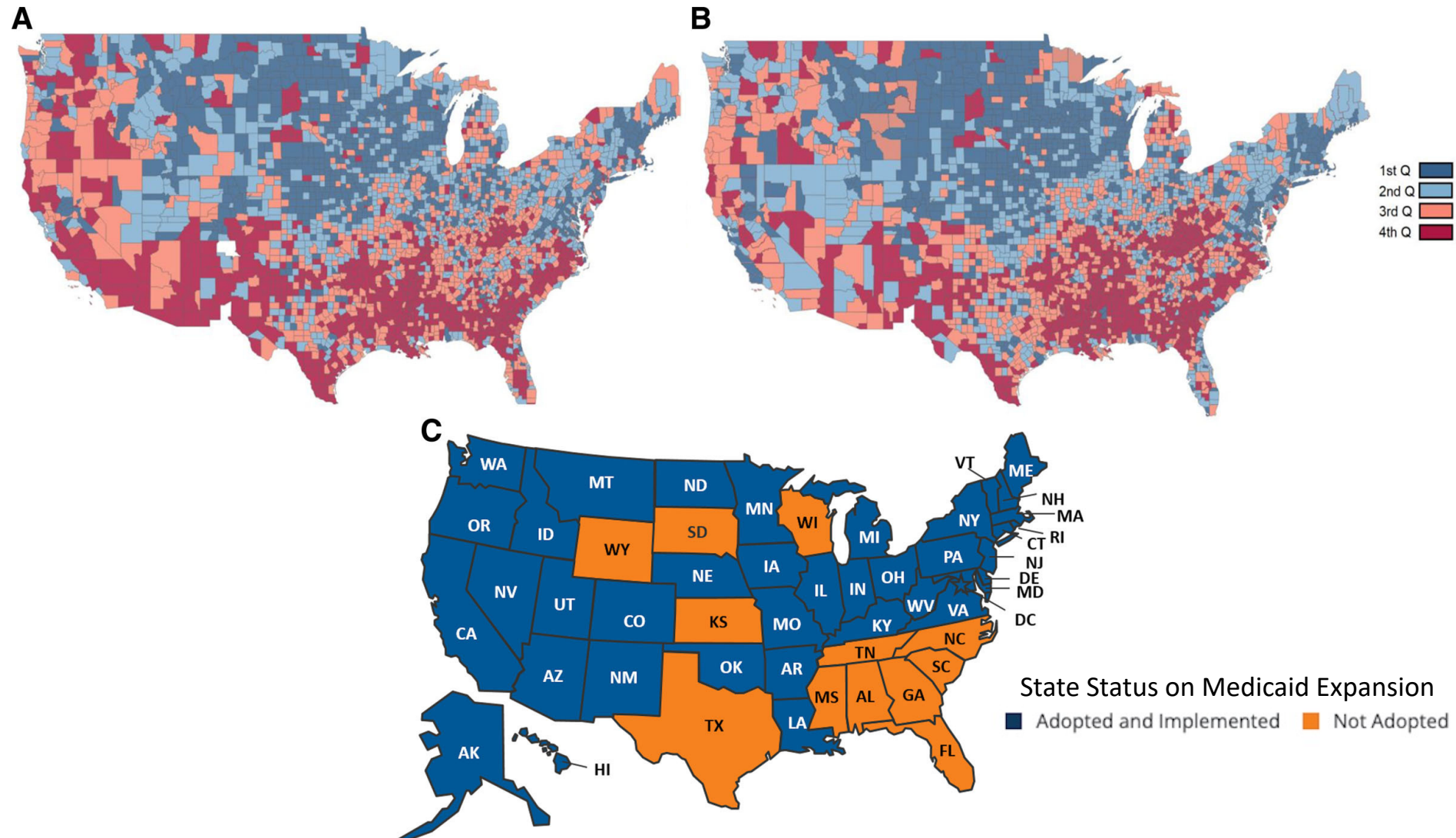

A Age-adjusted TAVR rate

☐	0-174
☐	174-325
☐	325-432
☐	432-551
■	551-3757
☐	NA

C Black or Hispanic individuals, %

☐	0-2.28
☐	2.28-4.30
☐	4.30-7.70
☐	7.70-18.68
■	18.68-96.06
☐	NA

Zip codes within the Philadelphia, Pennsylvania–Camden, New Jersey–Wilmington, Delaware Statistical Area

TAVR – transcatheter aortic valve replacement

Table 4. Association Between Zip Code–Level Markers of Socioeconomic Status, Race, and Ethnicity and Rates of Transcatheter Aortic Valve Replacement (TAVR) per 100 000 Medicare Beneficiaries, Adjusting for Clinical Comorbidities

Indicator	Difference in No. of TAVRs per 100 000 Medicare beneficiaries, % (95% CI)	P value
Median household income per $1000 decrease	−0.1 (−0.2 to −0.0)	.10
Black race per 1% increase	−1.1 (−1.7 to −0.6)	<.001
Hispanic ethnicity per 1% increase	−1.2 (−2.2 to −0.2)	.03
Dual eligibility for Medicaid per 1% increase	−1.2 (−1.9 to −0.5)	.001
Black race per 1% increase	−0.9 (−1.3 to −0.5)	<.001
Hispanic ethnicity per 1% increase	−1.1 (−2.0 to −0.2)	.02
Distressed Communities Index score per 1-unit increase	−0.3 (−0.4 to −0.1)	.001
Black race per 1% increase	−0.7 (−1.2 to −0.2)	.004
Hispanic ethnicity per 1% increase	−2.0 (−3.1 to −0.9)	<.001

Department of Medicine

Nathan et al. JAMA Cardiol. 2021

Social Vulnerability: Who will protect the most vulnerable among us?

State Status on Medicaid Expansion
■ Adopted and Implemented ■ Not Adopted

1st Q
2nd Q
3rd Q
4th Q

EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

Department of Medicine

Recommendations to Patients Should Consider Health Equity

Recommendations for Patient-Centered Approaches to ASCVD Prevention

COR	LOE	Recommendations
I	A	1. A team-based care approach is recommended for the control of risk factors associated with ASCVD.
I	B-R	2. Shared decision-making should guide discussions about the best strategies to reduce ASCVD risk.
I	B-NR	3. Social determinants of health should inform optimal implementation of treatment recommendations for the prevention of ASCVD.

EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

Department of Medicine

Example Considerations for Addressing Social Determinants of Health to Help Prevent ASCVD Events

Topic/Domain	Example Considerations
Cardiovascular risk	• Adults should be routinely assessed for psychosocial stressors and provided with appropriate counseling. • Health literacy should be assessed every 4 to 6 y to maximize recommendation effectiveness.
Diet	• In addition to the prescription of diet modifications, body size perception, as well as social and cultural influences, should be assessed. • Potential barriers to adhering to a heart-healthy diet should be assessed, including food access and economic factors; these factors may be particularly relevant to persons from vulnerable populations, such as individuals residing in either inner-city or rural environments, those at socioeconomic disadvantage, and those of advanced age*.
Exercise and physical activity	• In addition to the prescription of exercise, neighborhood environment and access to facilities for physical activity should be assessed.
Obesity and weight loss	• Lifestyle counseling for weight loss should include assessment of and interventional recommendations for psychosocial stressors, sleep hygiene, and other individualized barriers. • Weight maintenance should be promoted in patients with overweight/obesity who are unable to achieve recommended weight loss.
Diabetes mellitus	• In addition to the prescription of type 2 diabetes mellitus interventions, environmental and psychosocial factors, including depression, stress, self-efficacy, and social support, should be assessed to improve achievement of glycemic control and adherence to treatment.
High blood pressure	• Short sleep duration (<6 h) and poor-quality sleep are associated with high blood pressure and should be considered. Because other lifestyle habits can impact blood pressure, access to a healthy, low-sodium diet and viable exercise options should also be considered.
Tobacco treatment	• Social support is another potential determinant of tobacco use. Therefore, in adults who use tobacco, assistance and arrangement for individualized and group social support counseling are recommended.

Advanced age generally refers to age 75 years or older.

www.ACC.org/GMSPrevention

EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

epartment of Medicine

Letters to the Editor

Tips for Facilitating Lifestyle Changes in Low-Income Communities

Original Article: Diabetes Self-Management: Facilitating Lifestyle Change

Issue Date: September 15, 2017

See additional reader comments at: https://www. aafp.org/afp/2017/0915/p362.html

To The Editor: We were elated to read your article on lifestyle changes to promote weight loss and improve glycemic control in persons with diabetes mellitus. The program outlined includes measurable tools not only to assess the patient's readiness for behavioral changes but also to create short, realistic goals, which is a model we would want to implement with our patients and residents.

The article acknowledges that the Look AHEAD (Action for Health in Diabetes) study[1] was conducted with a carefully selected population with an abundance of resources, and it briefly mentions that psychosocial factors can be barriers to the interventions. As such, adapting these tools in practice can have some challenges in a resource-poor community. Therefore, when teaching and practicing in a low-income area, which makes up the largest portion of patients with diabetes and chronic diseases, we recommend some small changes to the protocol to address the social determinants of health.

Many of our patients reside in communities with high obesity rates, comparable with studies showing that counties with poverty rates exceeding 35% have obesity rates 145% greater than in wealthy counties.[2] This patient population is afflicted with safety concerns prohibiting them from walking in their neighborhoods and is often unable to afford gym memberships or sometimes even proper clothing for exercise. Thus, meal replacement or phone tracking models are luxuries that patients in the greatest need cannot afford. Although case management can help with basic needs, we also suggest alternative methods for implementing the programs discussed in the article, such as physician- or police-guided safe walking groups, paper logs for tracking food consumption and physical activity, instructions on how to count and chart heart rate, and a review of fresh items available through the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) that can be cooked in bulk.

It is often patients with the greatest need who realistically cannot benefit from new treatment models simply because of the lack of resources. As physicians, we must challenge ourselves to make the needs of these patients a priority if we are to adequately address the epidemics of obesity, prediabetes, and diabetes.

Walkitria Smith, MD
Riba Kelsey-Harris, MD
East Point, Ga.
E-mail: wasmith@msm.edu and rkelsey@msm.edu

Author disclosure: No relevant financial affiliations.

References

1. Dutton GR, Lewis CE. The look AHEAD trial: implications for lifestyle intervention in type 2 diabetes mellitus. *Prog Cardiovasc Dis*. 2015;58(1):69-75.

2. Levine JA. Poverty and obesity in the U.S. *Diabetes*. 2011;60(11):2667-2668.

Editor's Note: This letter was sent to the authors of "Diabetes Self-Management: Facilitat-

Produce Prescription Programs

Produce prescription for hypertension (PRxHTN) program
- 3 monthly, nonphysician provider visits for HTN adults screening positive for food insecurity
- Including BP measurement, nutrition counseling, and four $10 farmers market produce vouchers
- Dietary measures were collected at visits 1 and 3.
- Voucher use was tracked via farmers market redemption logs.

Behavior	No.	Intake	Postprogram	P Value
Health care team "always" talks about overall diet, %[a]	122	41.0	64.8	<.001[b]
Health care team "always" talks about increasing fruit and vegetable consumption, %[a]	121	38.0	75.2	<.001[b]
Daily servings of fruit, mean (standard deviation)[c]	125	1.6 (1.3)	2.4 (1.2)	<.001[d]
Daily servings of vegetables, mean (standard deviation)[c]	126	1.7 (1.1)	2.5 (1.3)	<.001[d]
No. days ate fast food in past week, mean (standard deviation)	129	1.3 (1.4)	0.7 (1.0)	<.001[d]

EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

Department of Medicine

Medical Mistrust and Its Impacts

Trust in health care among Americans has declined in recent decades, and it's worse among Black Americans.

Black Americans are more likely than whites to say they <u>don't trust</u> their physician

In an October 2020 <u>poll</u>, 7 of 10 Black Americans say they're treated unfairly by the health care system and 55% percent say they distrust it.

Mistrust may prevent people from getting care.

People who say they mistrust health care organizations are <u>less likely</u> to take medical advice, keep follow-up appointments, or fill prescriptions.

People who say they mistrust the system are <u>much more likely</u> to report being in poor health.

EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

Department of Medicine

Medical Mistrust, Racism, and Delays in Preventive Health Screening Among African-American Men

N=610 African-American Men's Health and Social Life Study

		Type of Preventive Screening Delay							
		Routine Check-up			Blood Pressure Screening			Cholesterol Screening		
Characteristic	OR	95% CI	*p*-value	OR	95% CI	*p*-value	OR	95% CI	*p*-value
Model 4[#,*]									
Everyday Racism[†]	**1.42**	(1.11, 1.82)	**.01**	**1.42**	(1.10, 1.82)	**.01**	.93	(.70, 1.24)	.62
Perceived Racism in Healthcare[†]	.10	(.48, 1.97)	.97	.86	(.43, 1.82)	.69	**3.44**	(1.44, 8.23)	**.01**
Medical Mistrust[†]	2.10	(.92, 4.78)	.08	**2.79**	(1.15, 6.81)	**.02**	1.02	(.37, 2.83)	.97
X2		**154.1**	**<.001**		**118.5**	**<.001**		**88.2**	**<.001**

Note. CI = Confidence Interval; OR = Odds Ratio;

*Models adjusted for age, recruitment site type, region, education, income, marital status, health insurance status, usual source of care, self-rated health status, chronic conditions (hypertension, coronary heart disease, and any heart disease), and depressive symptoms. Model 1 includes everyday racism only; Model 2 includes perceived racism in healthcare only; Model 3 includes medical mistrust only; Model 4 includes everyday racism, perceived racism in healthcare, and medical mistrust.

[†]For each 1-point increase on Likert-scale.

SCHOOL OF
MEDICINE

Department of Medicine
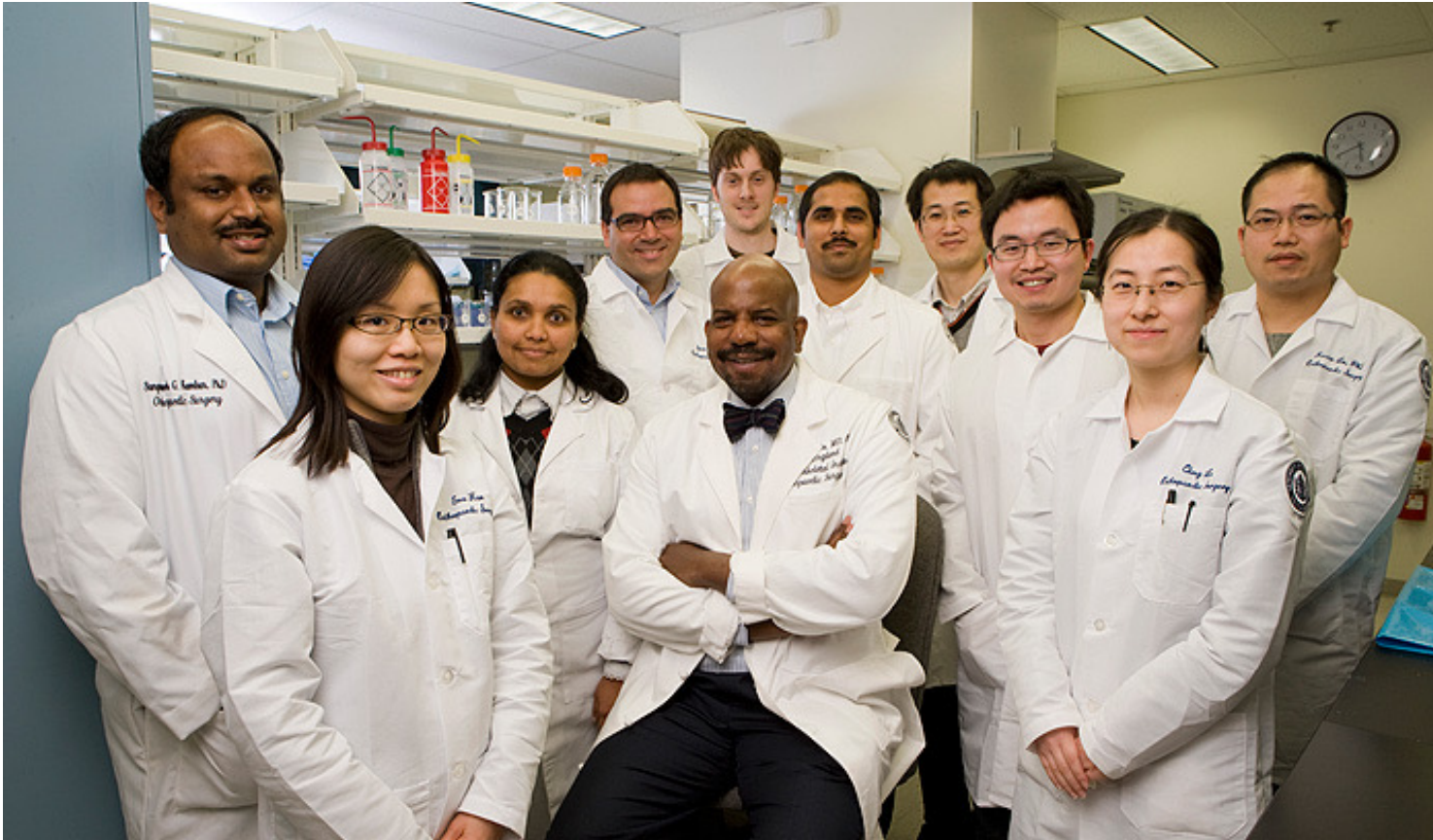
What does your Care (or Research) Team Look Like?

- Who's on It?
- Does it reflect your "wisdom" as a leader?
- Does it reflect the patient population you wish to reach?
- Does it reflect the society in which we live?

Diversity among Health Care Teams Can Help Improve Adherence with Clinical Screening

In this randomized experiment, Black male patients assigned to a Black male doctor were *MORE LIKELY* to undergo both *invasive* and *noninvasive* testing
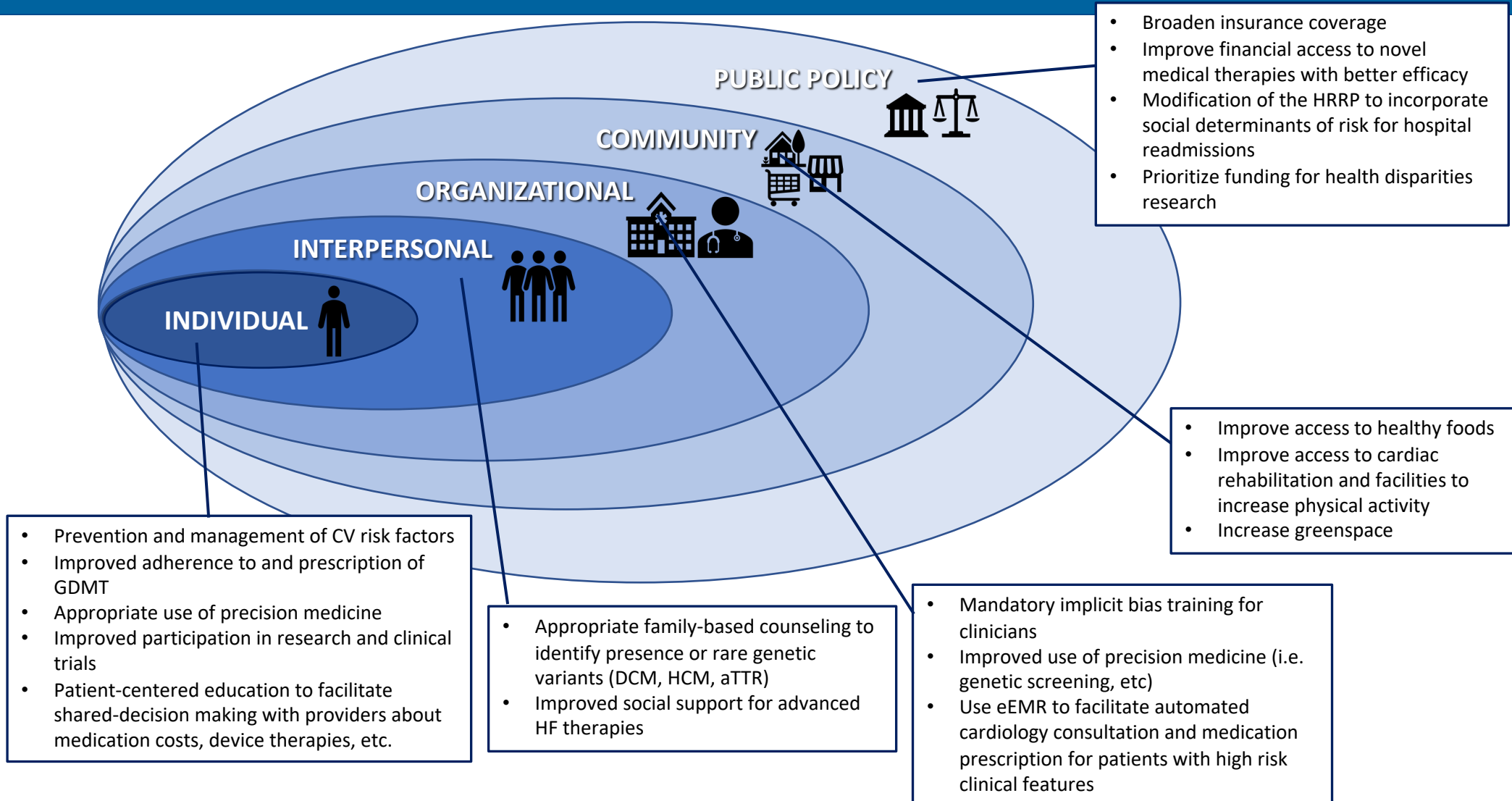

DOES DIVERSITY MATTER FOR HEALTH? EXPERIMENTAL EVIDENCE FROM OAKLAND
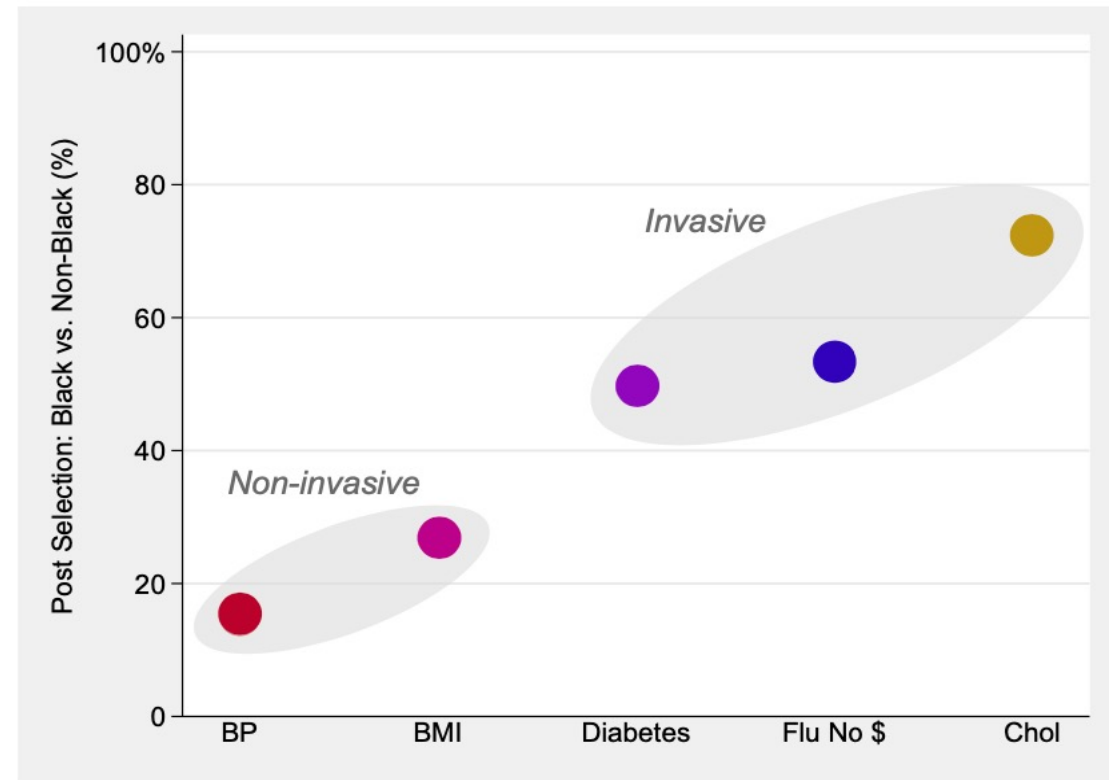
(a) Post % Differences by Preventives

Alsan et al., NBER Working Paper no. 24787, June 2018

Targets for improving racial HF disparities using the framework of the social-ecological model

PUBLIC POLICY

- Broaden insurance coverage
- Improve financial access to novel medical therapies with better efficacy
- Modification of the HRRP to incorporate social determinants of risk for hospital readmissions
- Prioritize funding for health disparities research

COMMUNITY

- Improve access to healthy foods
- Improve access to cardiac rehabilitation and facilities to increase physical activity
- Increase greenspace

ORGANIZATIONAL

- Mandatory implicit bias training for clinicians
- Improved use of precision medicine (i.e. genetic screening, etc)
- Use eEMR to facilitate automated cardiology consultation and medication prescription for patients with high risk clinical features

INTERPERSONAL

- Appropriate family-based counseling to identify presence or rare genetic variants (DCM, HCM, aTTR)
- Improved social support for advanced HF therapies

INDIVIDUAL

- Prevention and management of CV risk factors
- Improved adherence to and prescription of GDMT
- Appropriate use of precision medicine
- Improved participation in research and clinical trials
- Patient-centered education to facilitate shared-decision making with providers about medication costs, device therapies, etc.

EMORY UNIVERSITY SCHOOL OF MEDICINE

Department of Medicine

Conclusions

- Black Americans have the highest risk for incident and prevalent HF compared to other race-ethnic groups, in part due to the higher burden of traditional CV risk factors, particularly hypertension

- The impact of social determinants of health are far-reaching, and influence the racial disparities in health and the increased risk for HF in Black Americans

- Neighborhoods with more race-ethnic minority groups often lack other resources necessary for healthy lifestyle

- Clinicians, researchers, policy makers, etc. must take social determinants of health into account when counseling patients on healthy lifestyle behaviors to prevent risk of disease, but also when determining methods to treat disease

EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

Department of Medicine

Thank You!

email: aamorr3@emory.edu

@amorrismd