

Dismantling Bias in Advanced Heart Failure Therapy Allocation

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Disclosures

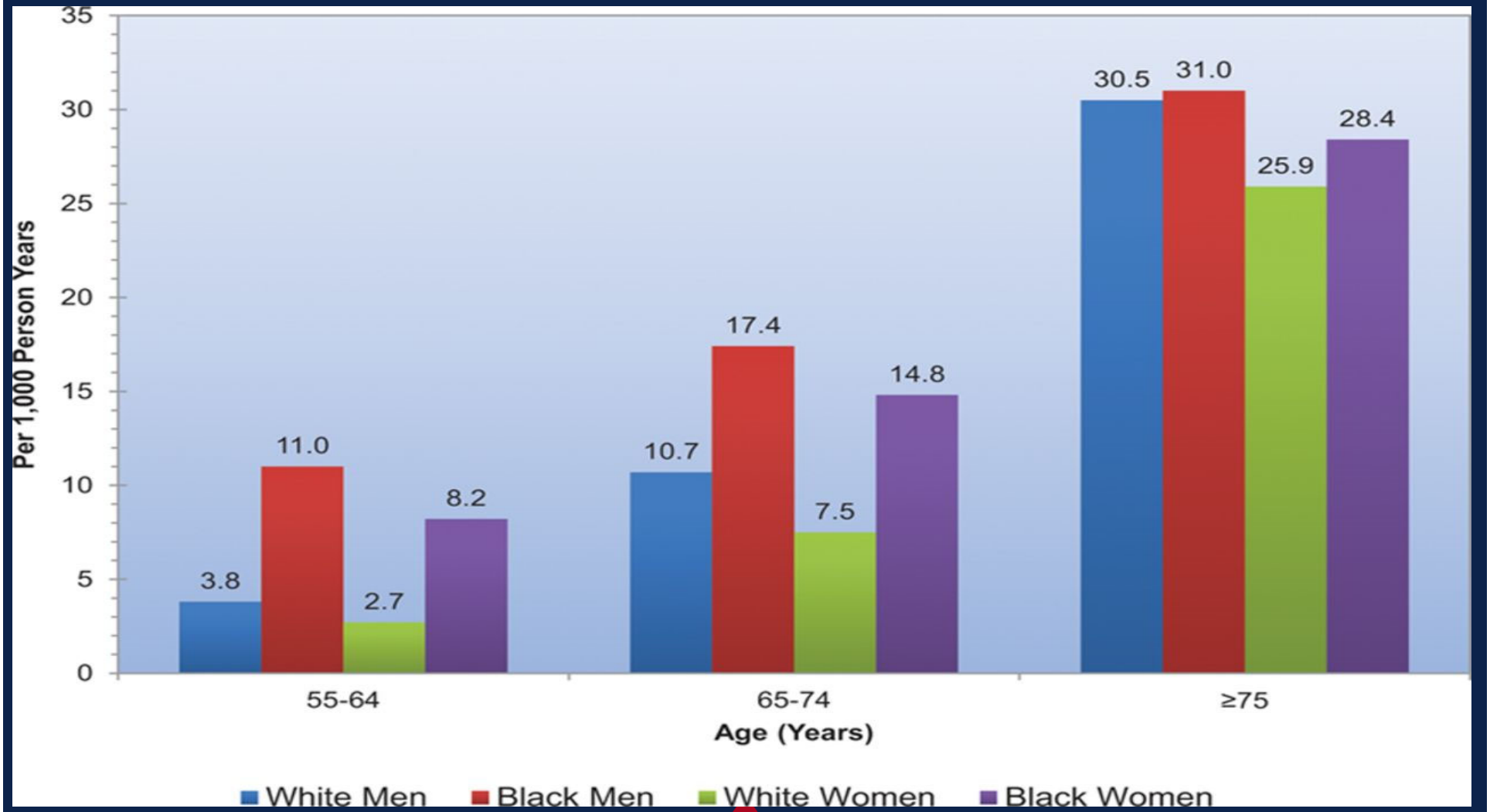
- NHLBI K01HL142848
- NHLBI R25HL126146 subaward 11692sc
- NHLBI L30HL148881
- Women As One Escalator Award

Highest Heart Failure Prevalence in African Americans Women

- African-American
  - 3.5% men
  - 3.9% women
- Hispanic
  - 2.5% men
  - 2.1% women
- White
  - 2.2% men
  - 1.9% women
- Asian
  - 1.7% men
  - 0.7% women

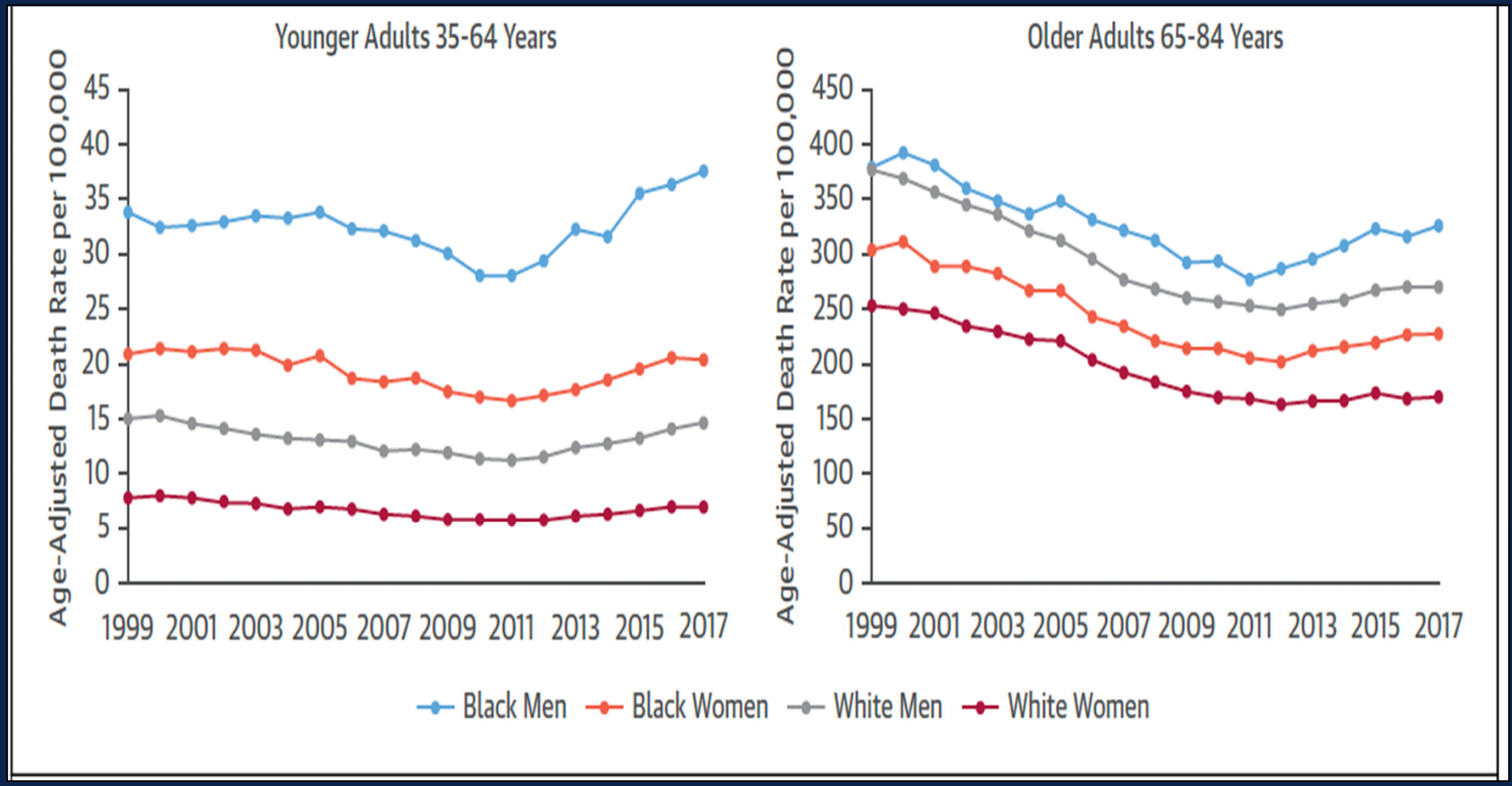
Virani et al. Circulation 2020

African-Americans Patients Have the Highest Rates of Heart Failure



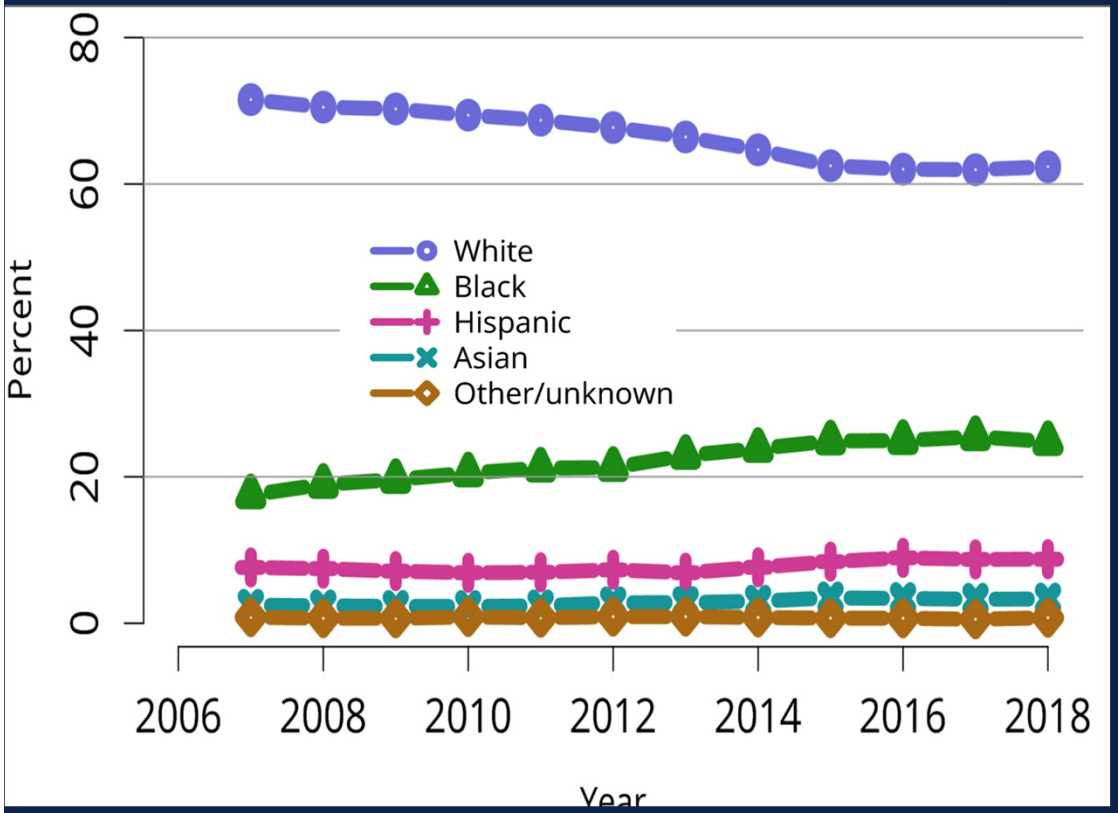
Dariush Mozaffarian et al. Circulation. 2016;133:e38-e360

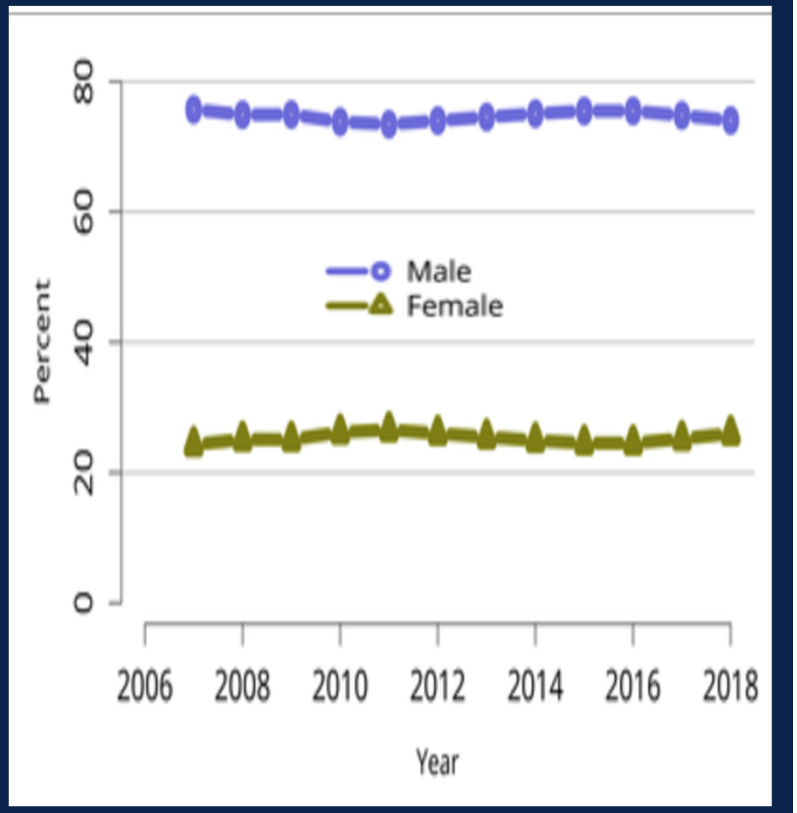
Heart Failure Death Rates Are Increasing in African-American Population



Glynn et al. JACC 2019

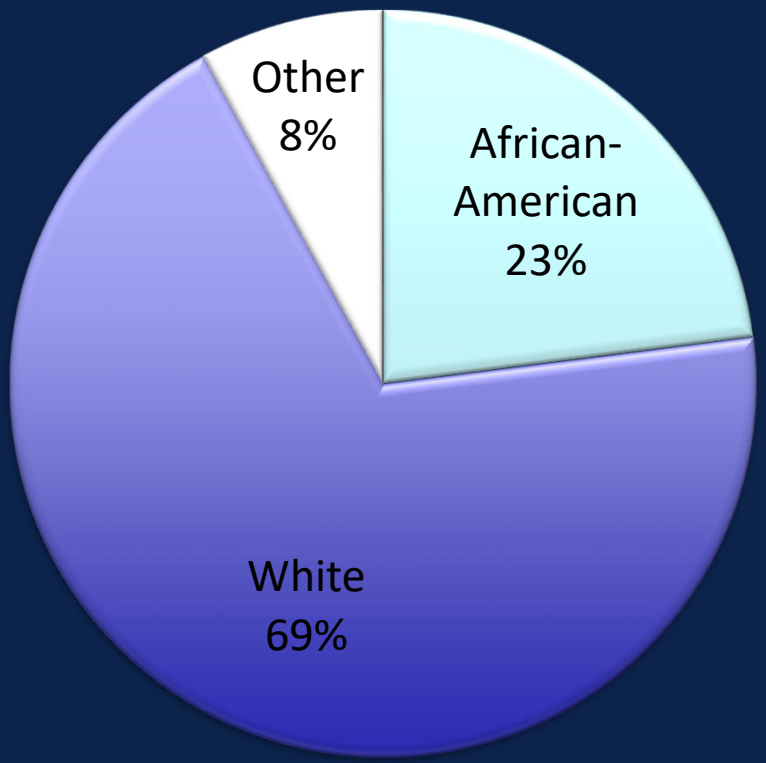
Access to Heart Transplants Is Not Equal Across Race and Sex

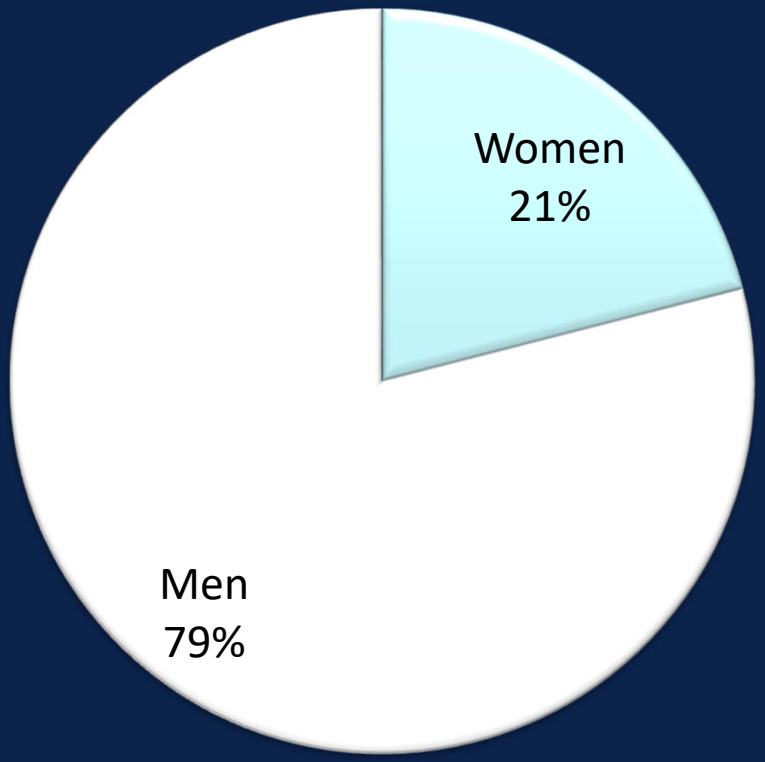




Colvin-Adams et al. OPTN/SRTR 2020

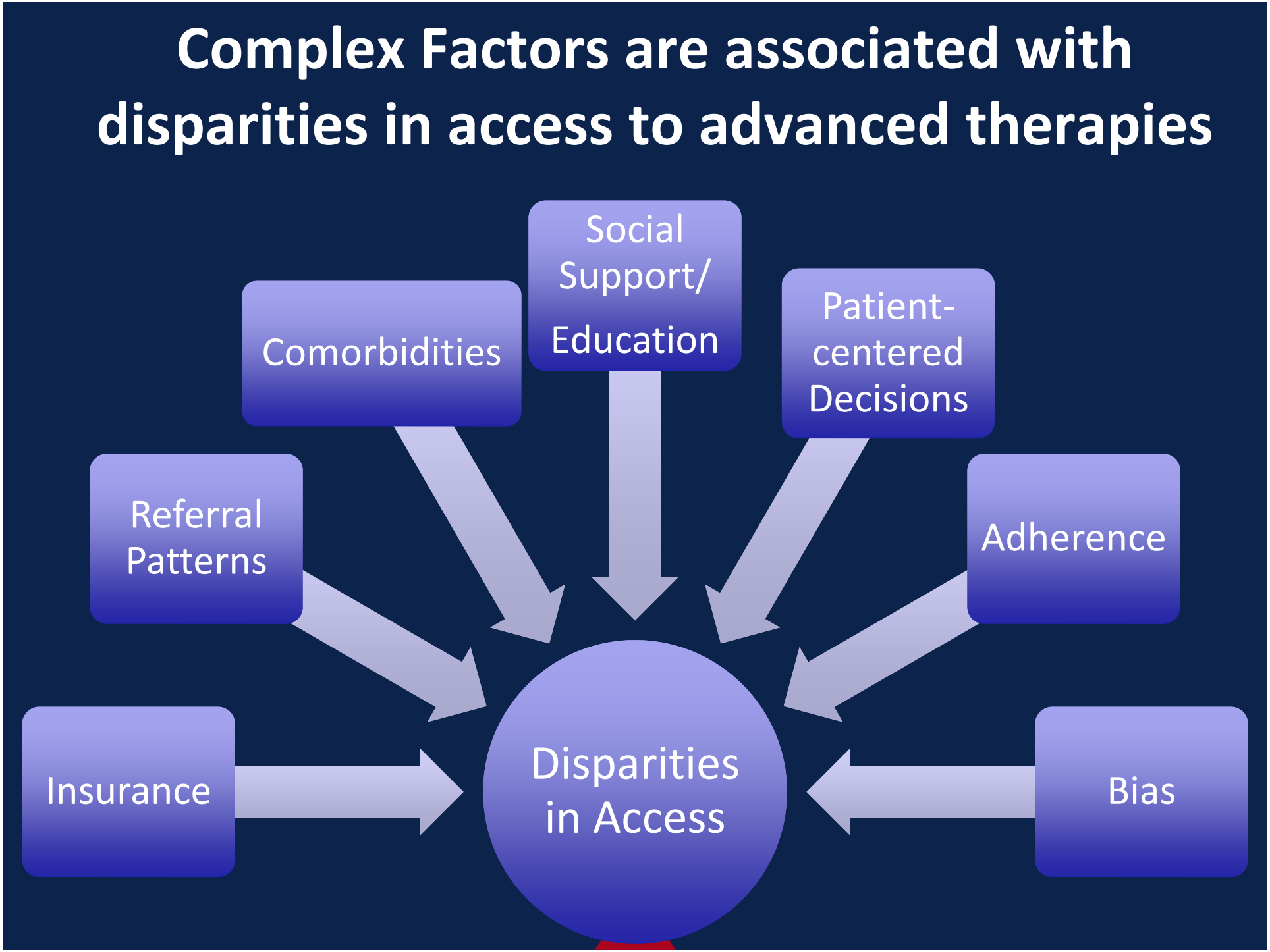
Access to LVADs Is Not Equal Across Race and Sex



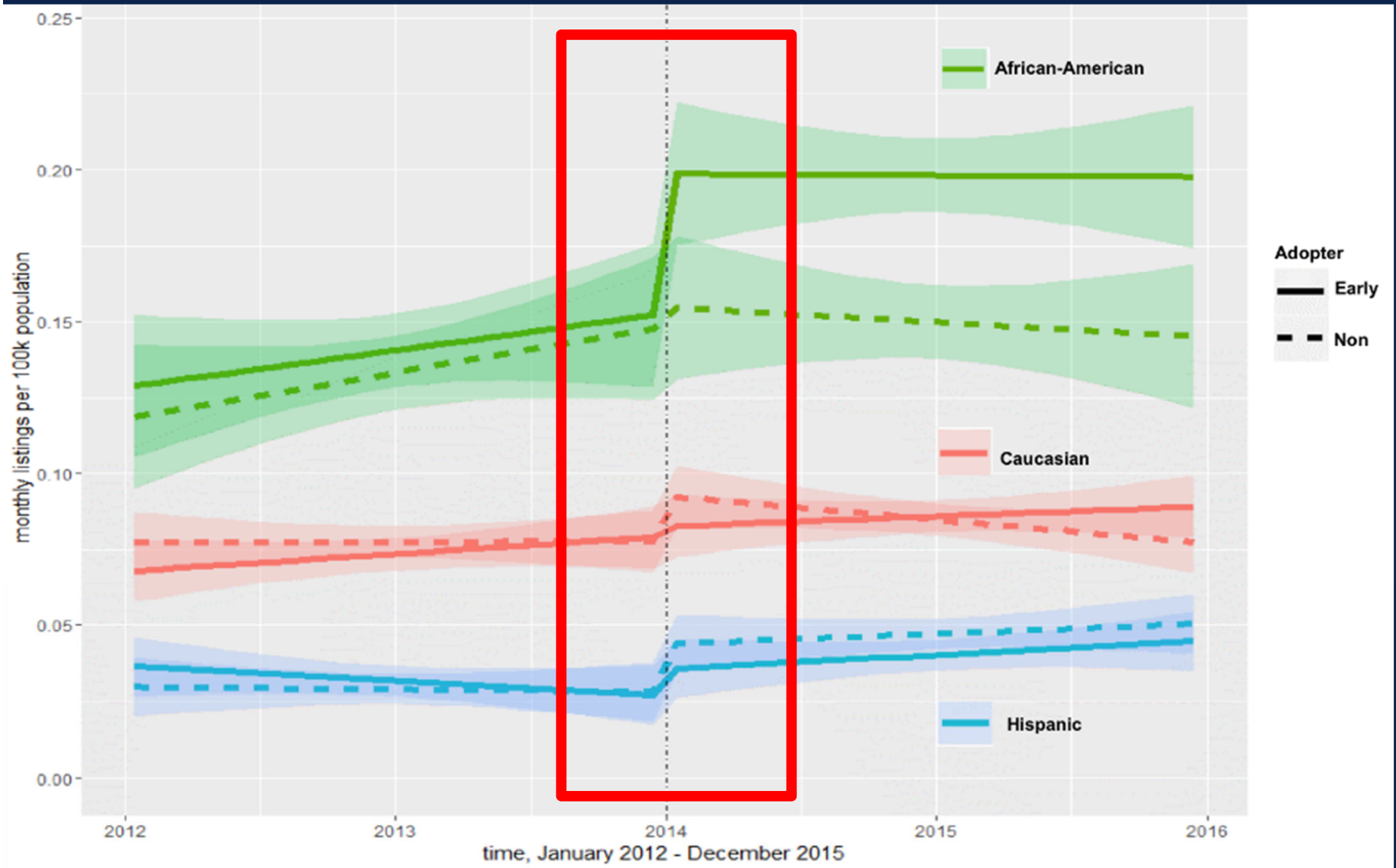


INTERMACS 2012-2015 Quarterly Report

Complex Factors are associated with disparities in access to advanced therapies

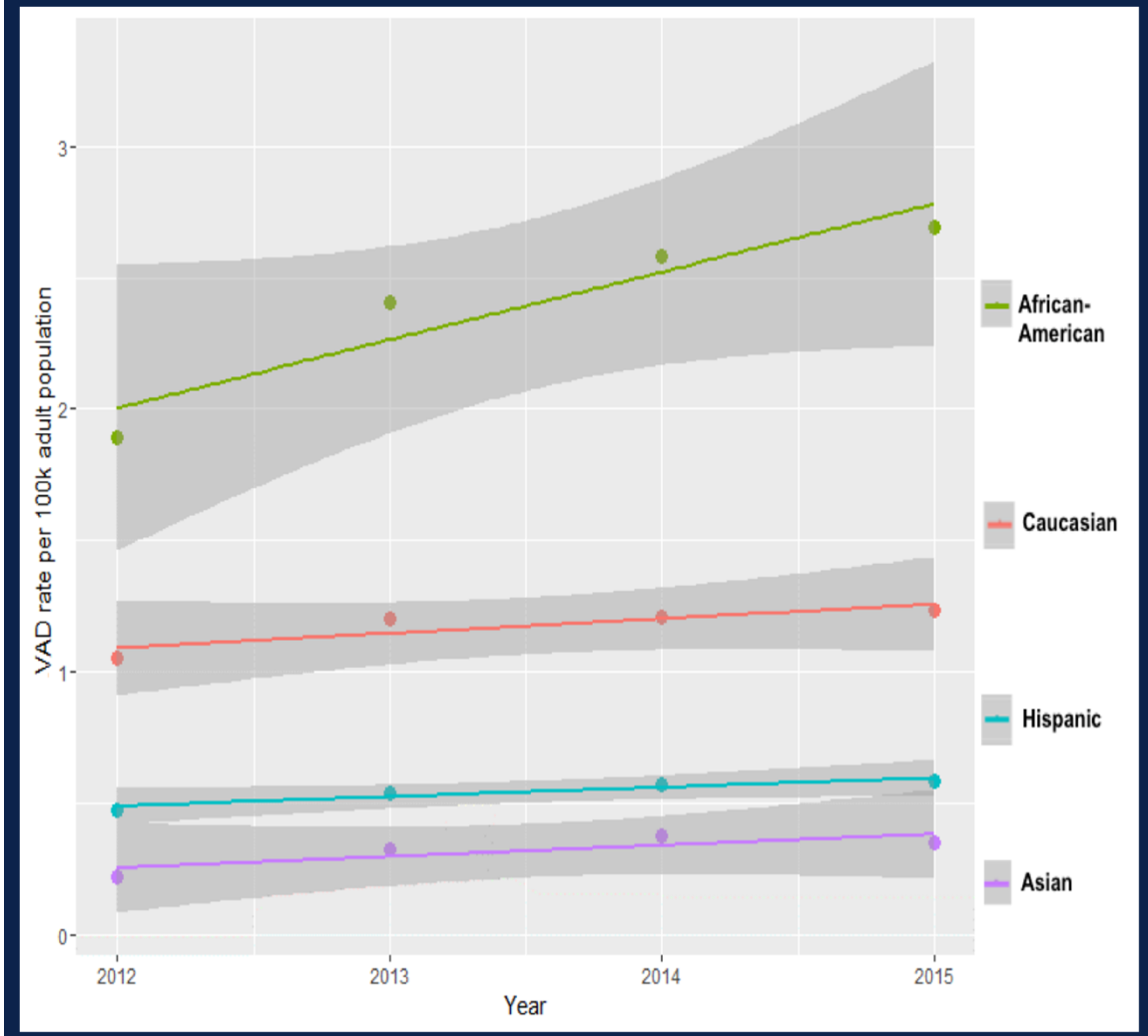


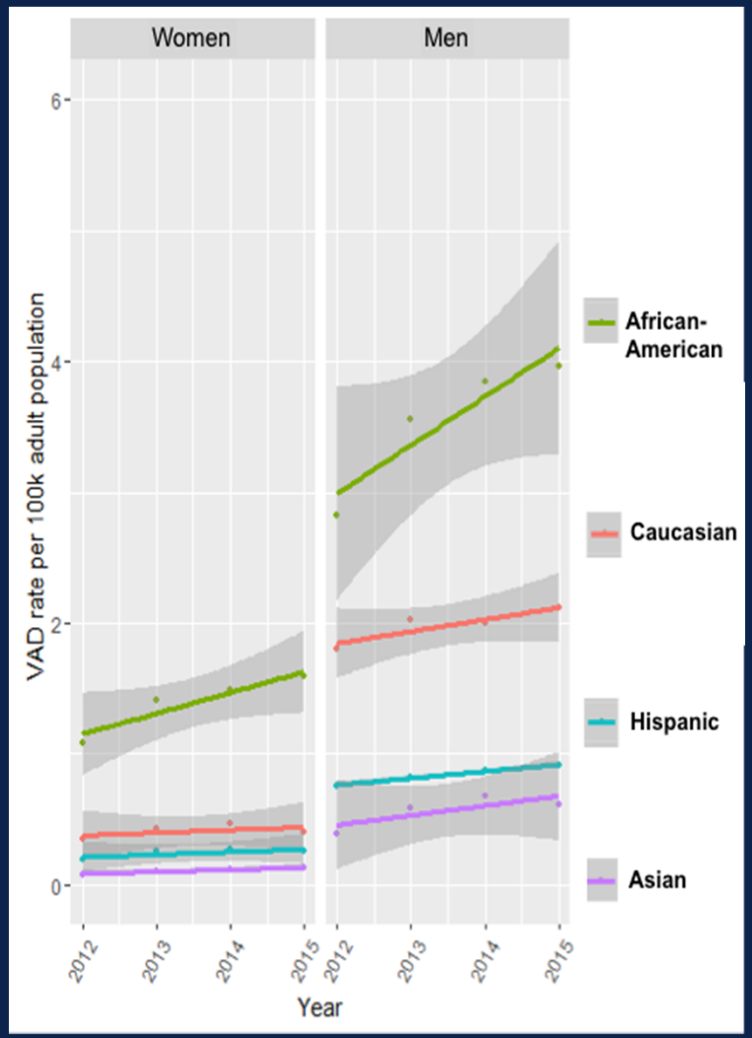
Heart Transplant Listing Rates Increased Among African-American Patients In Early ACA Adopter States



Breathett et al. JACC: Heart Failure 2017

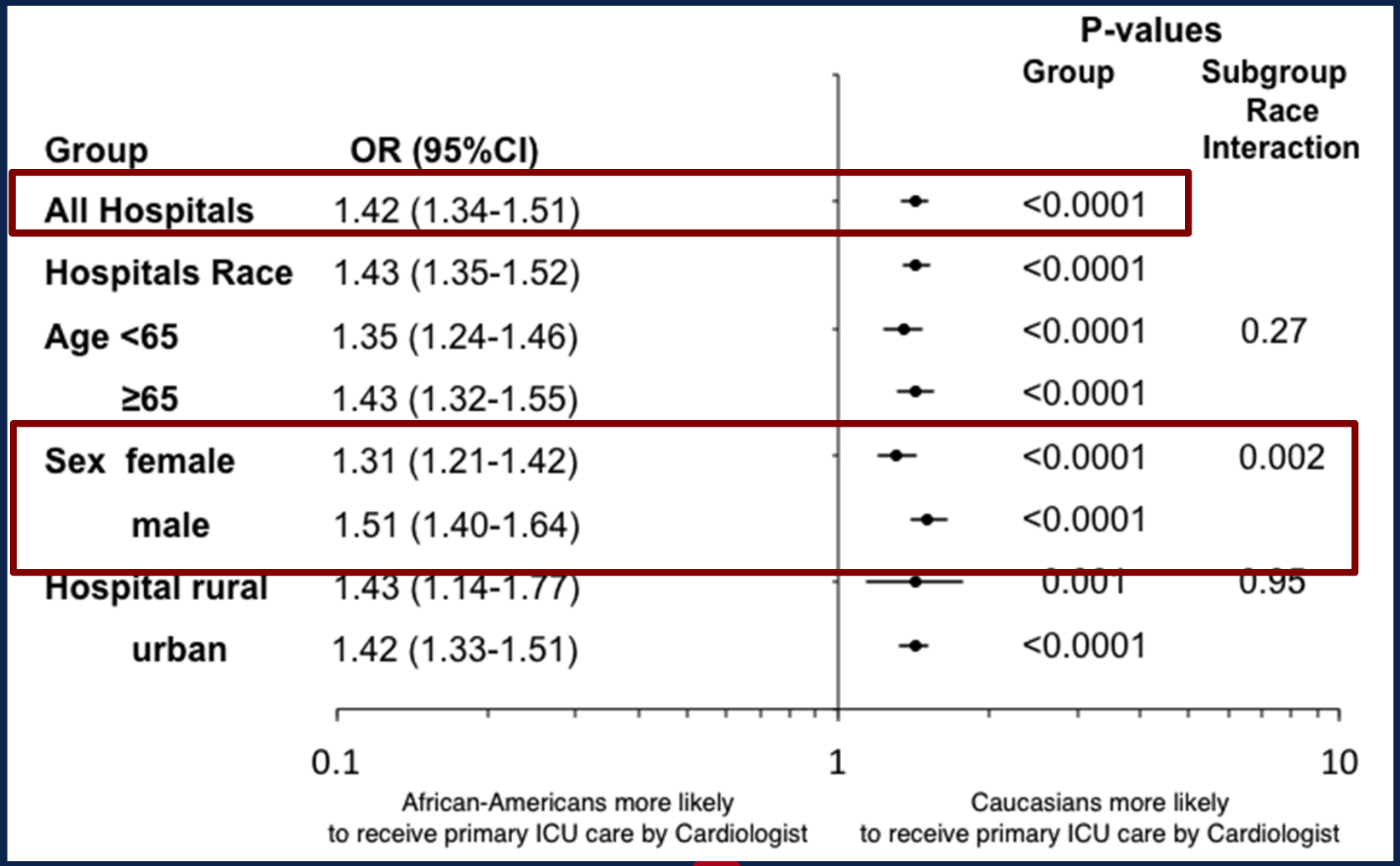
Increasing Ventricular Assist Device Rates Among African-American Patients





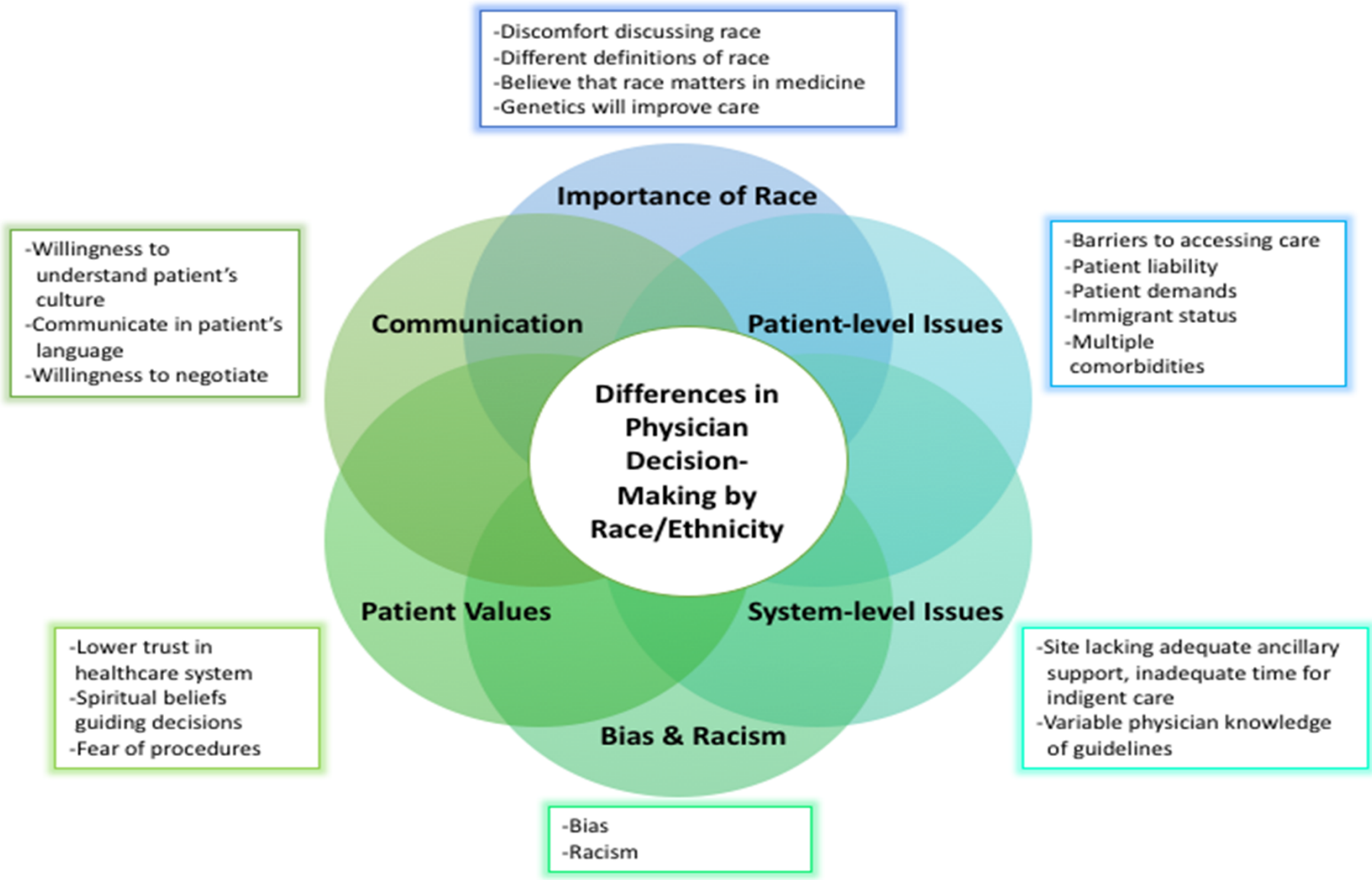
Breathett et al. Circulation HF 2018

African-American Patients Are Less Likely To Receive Care By A Cardiologist



Breathett et al. JACC: HF 2018

Unequal Treatment

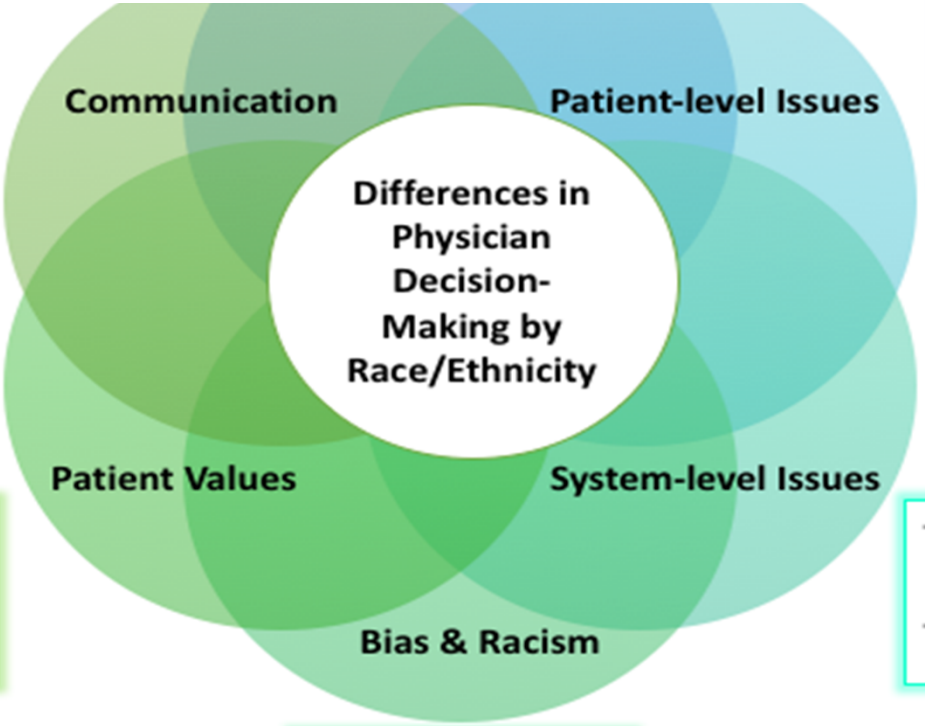


Breathett et al. Journal of Racial and Ethnic Health Disparities 2018

-Discomfort
-Genetics

-Discomfort discussing race
-Different definitions of race
-Believe that race matters in medicine
-Genetics will improve care

Importance of Race



-Willingness to understand patient's culture
-Communicate in patient's language
-Willingness to negotiate

-Barriers to accessing care
-Patient liability
-Patient demands
-Immigrant status
-Multiple comorbidities

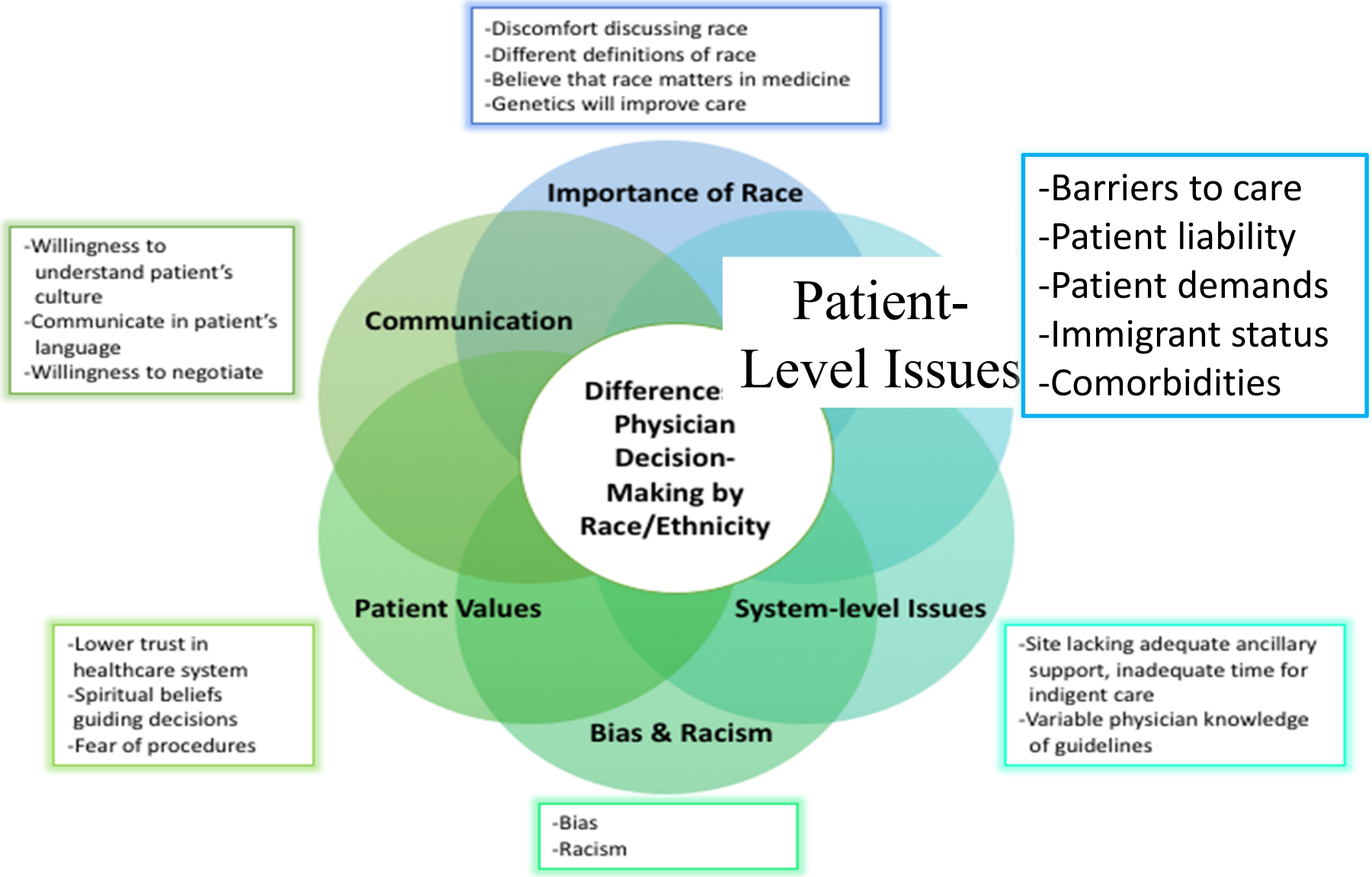
-Lower trust in healthcare system
-Spiritual beliefs guiding decisions
-Fear of procedures

-Site lacking adequate ancillary support, inadequate time for indigent care
-Variable physician knowledge of guidelines

-Bias
-Racism

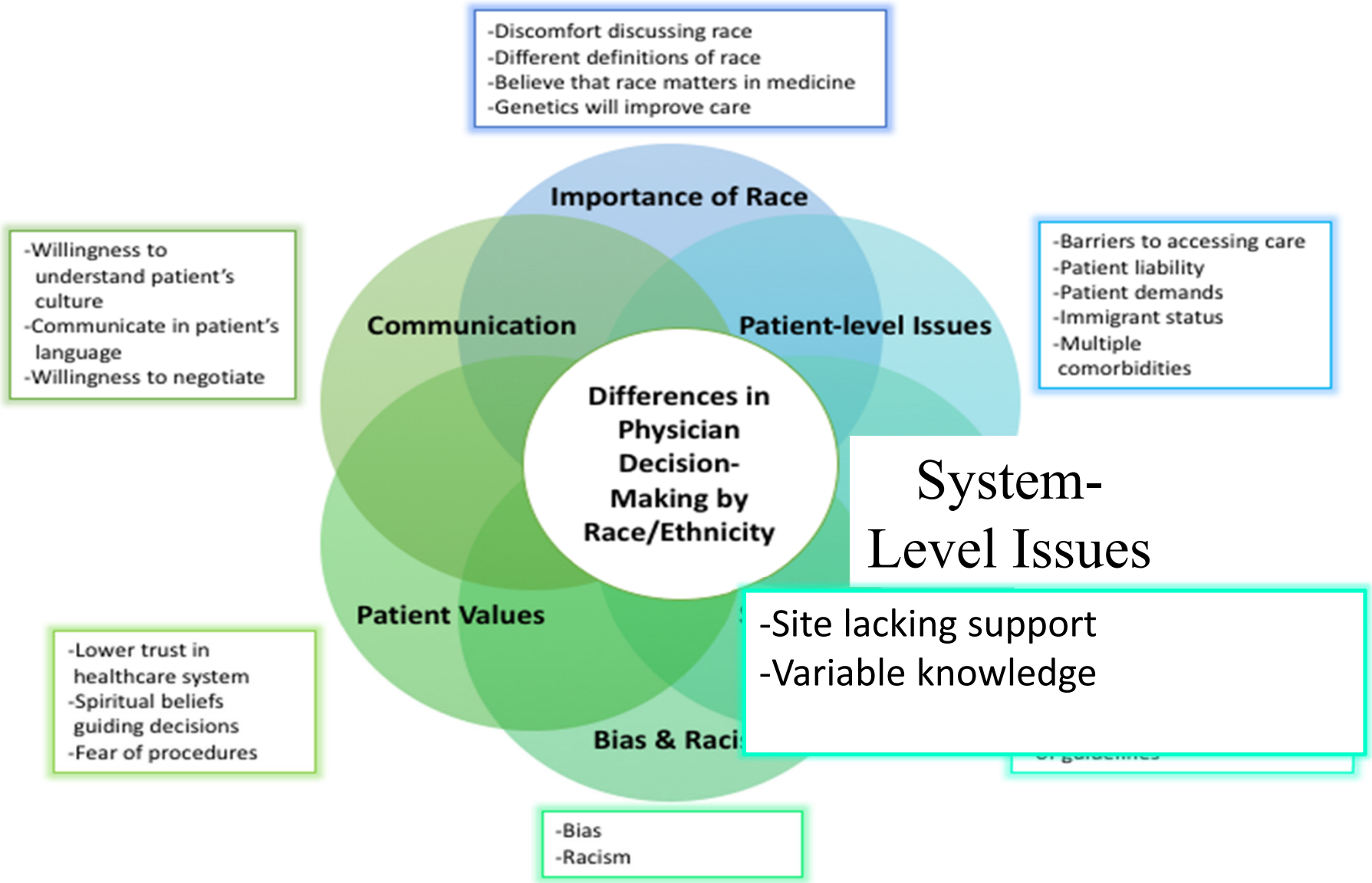
Breathett et al. Journal of Racial and Ethnic Health Disparities 2018

Unequal Treatment



Breathett et al. Journal of Racial and Ethnic Health Disparities 2018

Unequal Treatment



Breathett et al. Journal of Racial and Ethnic Health Disparities 2018

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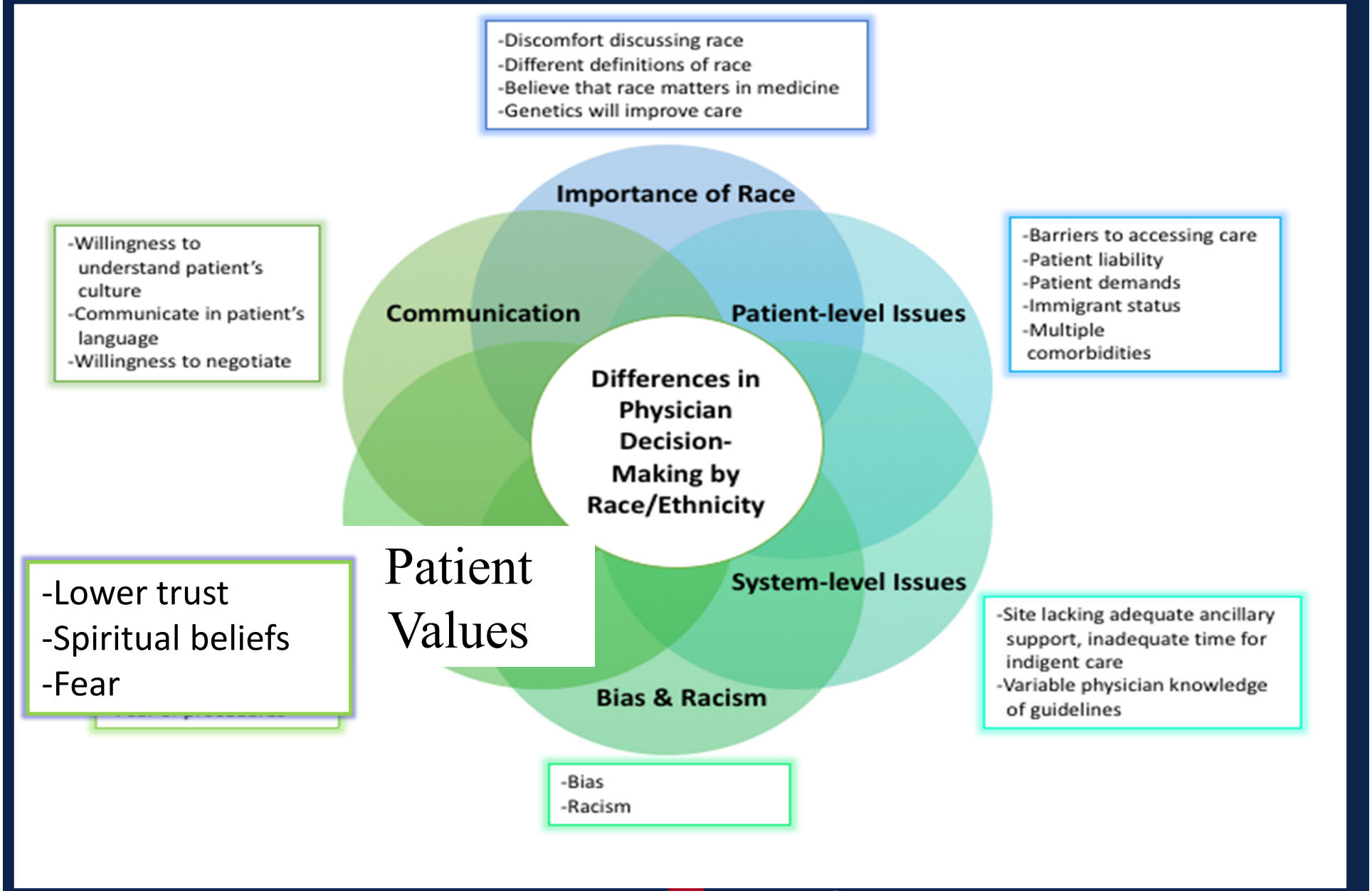
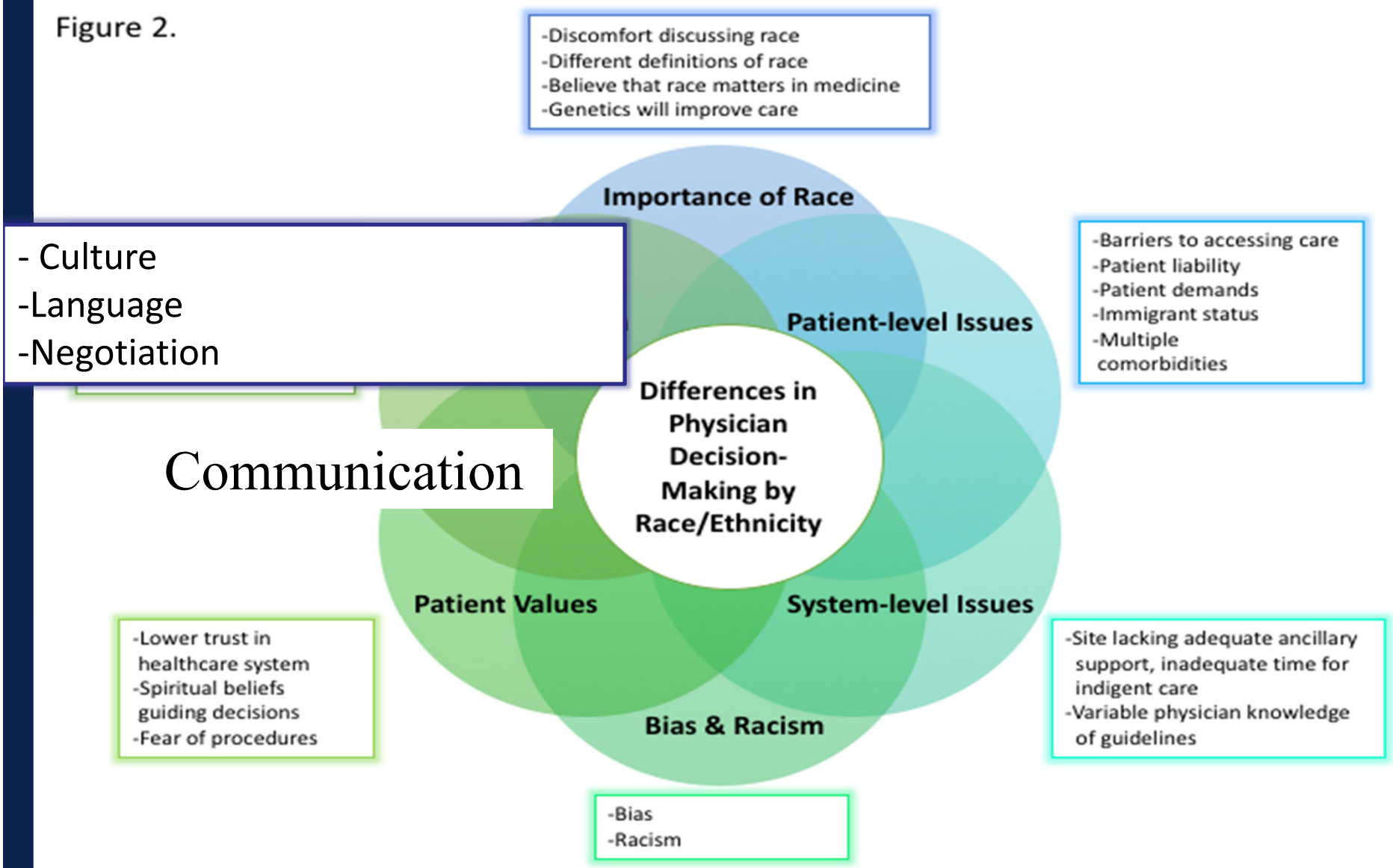


Breathett et al. Journal of Racial and Ethnic Health Disparities 2018

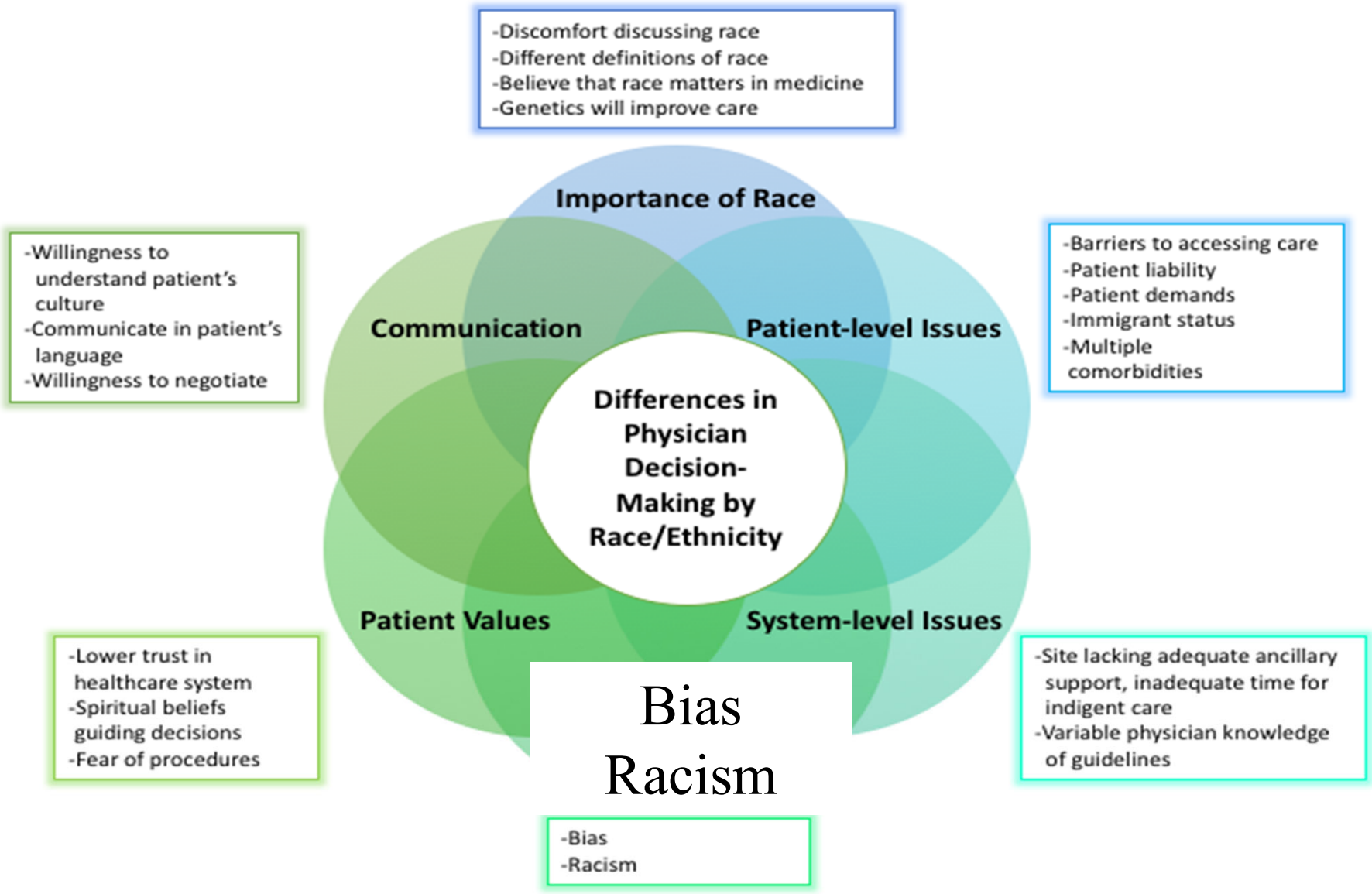
Unequal Treatment

Figure 2.



Breathett et al. Journal of Racial and Ethnic Health Disparities 2018

Unequal Treatment



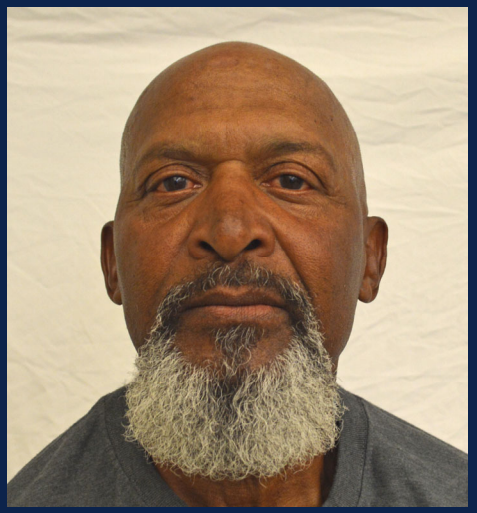
Breathett et al. Journal of Racial and Ethnic Health Disparities 2018

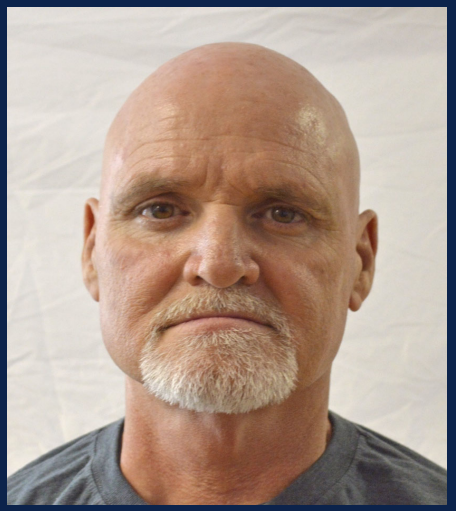
Unequal Treatment: Racial/Ethnic Minorities

"I've had ... [Black] patients who I think have not been offered procedures because of either **where they were economically** or where they were **assumed to be economically because of their race**... I had a patient who clearly needed to be catheterized for their presentation and it was suggested that we do medical management. And I remember talking to the cardiologist and just saying that I didn't understand why we're doing this ... As soon as we started talking, he said, "oh well, of course, we'll cath him." And so, like that, it changed...**[I] certainly have enough anecdotal experience to think that people are probably [being] treated differently based on race**.
- (Male, White Physician)"

Breathett et al. Journal of Racial and Ethnic Health Disparities 2018

Race Bias Impacts Allocation Advanced Therapy





History of Present Illness: Mr. Jamal Jones is a 63 year old Non-Hispanic African-American man with a history of dilated no[illegible]ion fraction 20%, Left Ventricle End Diastolic[illegible] (Cr 1.8mg/dL, GFR 42 ml/min/1.73m2*L), di[illegible]asymptomatic peripheral arterial disease who h[illegible]cute on chronic heart failure exacerbation. He expe[illegible]oss the room (5 feet). He has been shocked for vent[illegible]	**SAME**
Height/Weight/Body Mass Index: 183 cm (6.0 feet) / 115kg (254 lb) / 34.3	
Insurance Type: Medicaid	

History of Present Illness: Mr. Greg Jones is a 63 year old Non-Hispanic White man with a history of dilated non-ischemic cardiom[illegible]ft Ventricle End Diastolic Dimension 7.5cm), c[illegible]2 ml/min/1.73m2*L), diabetes (HgbA1c 7.5%), depr[illegible]erial disease who has had 4 hospitalizations in the p[illegible]cerbation. He experiences dyspnea and ligh[illegible]as been shocked for ventricular tachycardia once i[illegible]	**SAME**
Height/Weight/Body Mass Index: 183 cm (6.0 feet) / 115kg (254 lb) / 34.3	
Insurance Type: Medicaid	

Breathett et al. JAHA 2019

Factors Influencing Allocation

LASSO Regression	Heart Transplant Coefficient	BTT VAD Coefficient	DT VAD Coefficient
HPI	0.032		
Ht/Wt/BMI			
Other History	0.058	0.080	
Social History	0.085	0.137	
Adherence	0.123	0.020	
Cardiac dx	0.027	0.009	
Lab	0.054	0.040	
Additional tests	-0.003		

Breathett et al. JAHA 2019

Factors Influencing Allocation

Multivariable Regression Demographic Factors + LASSO	Heart Transplant Parameter (95%CI)	BTT VAD Parameter (95%CI)	DT VAD Parameter (95%CI)
White	-0.13 (-0.47, 0.21)	0.18 (-0.18, 0.55)	0.49 (-0.01, 1.00)
Women	0.09 (-0.29, 0.46)	0.19 (-0.20, 0.58)	0.27 (-0.27, 0.82)
Age 40+ years	0.39 (-0.04, 0.83)	0.25 (-0.20, 0.71)	0.03 (-0.62, 0.68)
11+ years past training	**-0.49* (-0.92, -0.06)**	**-0.51* (-0.96, -0.07)**	0.12 (-0.52, 0.77)
Cardiologist	0.04 (-0.37, 0.46)	0.12 (-0.31, 0.55)	0.01 (-0.59, 0.61)
AA patient	0.20 (-0.53, 0.93)	0.15 (-0.61, 0.92)	0.76 (-0.33, 1.86)
40+year and AA patient	**-0.58* (-1.15,-0.0002)**	-0.25 (-0.85, 0.36)	0.28 (-0.59, 1.15)

Breathett et al. JAHA 2019

Race Bias in Allocation

- **Photos** contribute to **racial bias**
- **African-American was sicker**
- **More concerns for appropriate treatment of the African-American**
- **Greater concern for adherence/trust for African-American**

Breathett et al. JAHA 2019

Race Bias in Allocation

"This guy was **taking care of himself**, just his disease outstripped his ability to manage it"

—White participant/**White** patient

Breathett et al. JAHA 2019

Race Bias in Allocation

"I would say that I don't know right or wrong, I think sometimes in cases where we don't have the ability to wait, we typically give the patients the **benefit of the doubt for an LVAD**, probably **not** for **transplant**"

—White participant/**African-American** patient

Breathett et al. JAHA 2019

Race Bias in Allocation HF Therapies

Final Recommendations of Interviews:

- **Road test for White man** with inotropes to **help** him get a **transplant**
- Offer the **African-American man** an **LVAD**

Breathett et al. JAHA 2019

Race and Gender Bias in Allocation HF Therapies

- Harsh judgement on **appearance** of women
- African-American man sicker than others
- **Spouse** is an **inadequate** caregiver for women patients
- **Children are liabilities** for women, African-American women
- **Concerns of finances** for African-American woman

Breathett et al. JAMA Network Open 2020

Race and Gender Bias in Allocation HF Therapies

"**Because she's African American**, it sounds like **her socioeconomic status is not the greatest**—1 car, she's working, disability; those sorts of things that make me … think that she's probably not as socioeconomically stable as other patients.

Especially, since she **lacked health care insurance a couple of times**"

—White woman participant/**African American woman patient**

Breathett et al. JAMA Network Open 2020

Race and Gender Bias in Allocation HF Therapies

- Similar recommendations by race and gender
- AA woman vs White woman
  - transplant: 7.53 [0.59] vs 6.53[0.61]; *P* = .56
  - BTT VAD: 8.11 [0.58] vs 7.78 [0.57]; *P* = .79
  - DT VAD: 7.00 [0.77] vs 7.48 [0.63]; *P* > .99
- Interviews recommending VAD for all

Breathett et al. JAMA Network Open 2020

Race and Gender Bias in Allocation Process

- Most important factors were **social support** and **adherence**
- **Race and gender** influenced interpretation of **subjective factors**
- **Decision-making process** influenced by race and gender

Breathett et al. JAHA 2019; Breathett et al. JAMA Network Open 2020


HABIT

Strategies for Equity in Advanced Heart Failure

- Intervene upon bias, structural racism, and SDOH
- Initiate evidence-based bias reduction and anti-racism programs
- Avoid subjective assessments
- Improve group decision-making process
- Develop Implementation Plan for Equity

John Lewis @repjohnlewis · Jun 27, 2018

Do not get lost in a sea of despair. Be hopeful, be optimistic. Our struggle is not the struggle of a day, a week, a month, or a year, it is the struggle of a lifetime. Never, ever be afraid to make some noise and get in good trouble, necessary trouble. #goodtrouble

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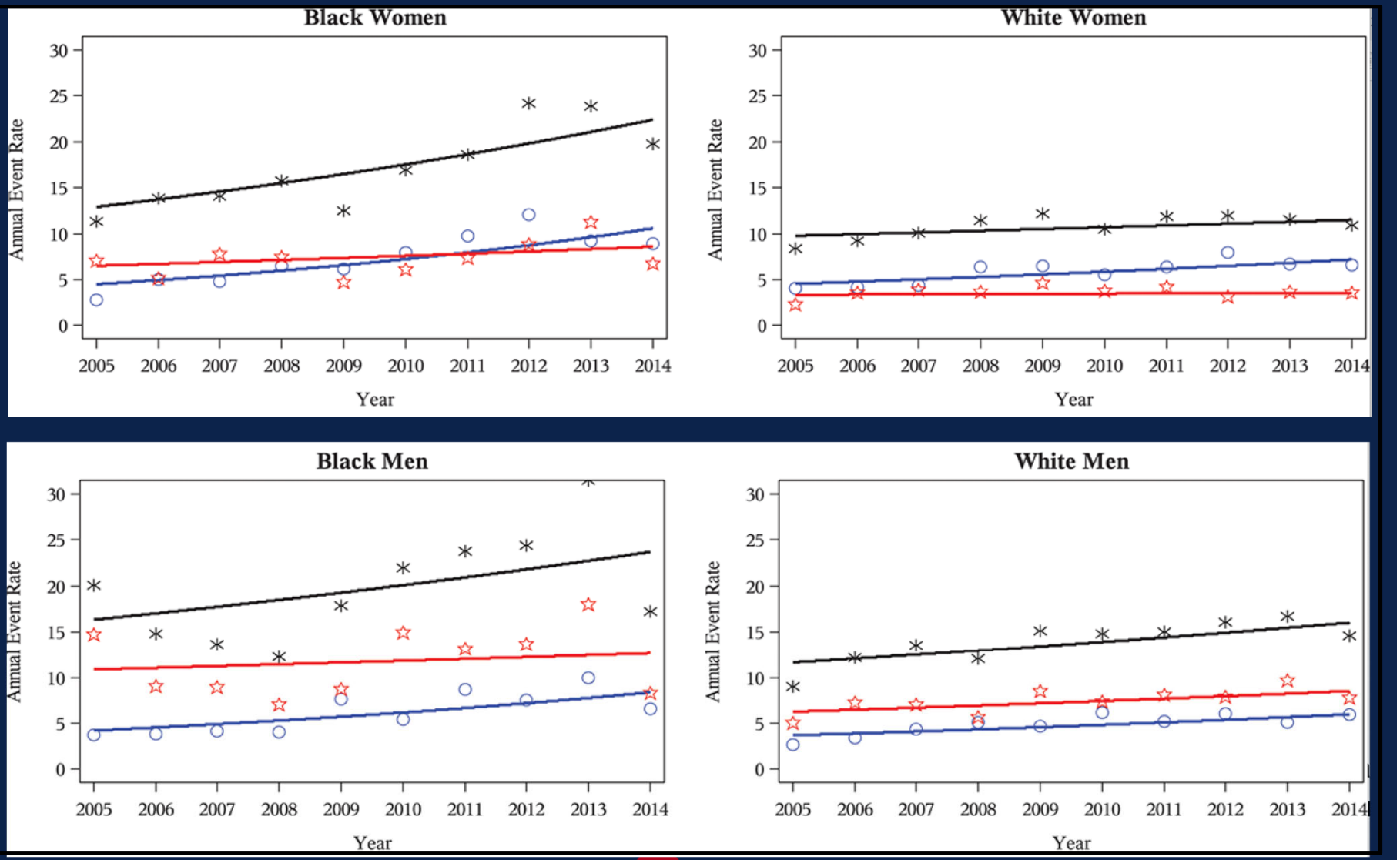
Supplementary Slides

Hospitalization Rates Vary by Race/Gender

Black= All Red= HFreF Blue= HFpEF



Chang et al. Circulation 2018