

# UPDATE IN INTERNAL MEDICINE

## HEALTH DISPARITIES IN CARDIOVASCULAR CARE



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# Disclosures

- Grant funding: National Institutes of Health, National Heart Lung and Blood Institute, Women As One Escalator Award
- Honoraria: American Academy of Family Physicians, Delta Research Education Fund, Lehigh Valley Health System, Sanofi
- Medical Board: Clue Medical ([helloclue.com](http://helloclue.com))



# Learning Objectives

- Analyze cardiovascular health disparities and define key terms
- Discuss the scope of health disparities in cardiac care
- Identify barriers to cardiovascular health equity and strategies to overcome them





# Health Disparities and Health Equity: The Issue Is Justice

Eliminating health disparities is a *Healthy People* goal. Given the diverse and sometimes broad definitions of health disparities commonly used, a subcommittee convened by the Secretary's Advisory Com-

Paula A. Braveman, MD, MPH, Shiriki Kumanyika, PhD, MPH, Jonathan Fielding, MD, MPH, MA, MBA, Thomas LaVeist, PhD, Luisa N. Borrell, DDS, PhD, Ron Manderscheid, PhD, and Adewale Trottman, MD, MPH, MA  
Am J Public Health 2011 Dec;101(Suppl 1):S149-55.

**ONE OF 2 OVERARCHING**  
goals of *Healthy People 2010*<sup>1</sup> was  
“to eliminate *health disparities*

cultural, and technical perspectives may generate different definitions of health disparities or in-

wording. Clarifying these co will enable medical and p health practitioners and

“Health disparities do not refer generically to all health differences... [they refer to] differences of particular relevance to social justice because they may arise from intentional or unintentional discrimination or marginalization...”

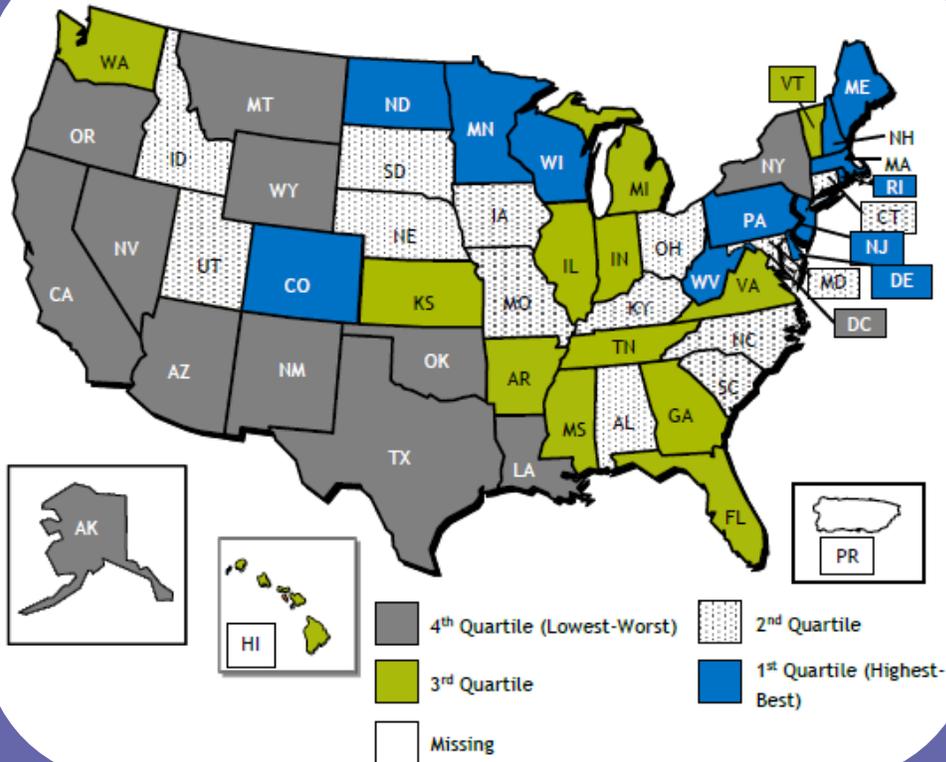


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# Quality ≠ Equity

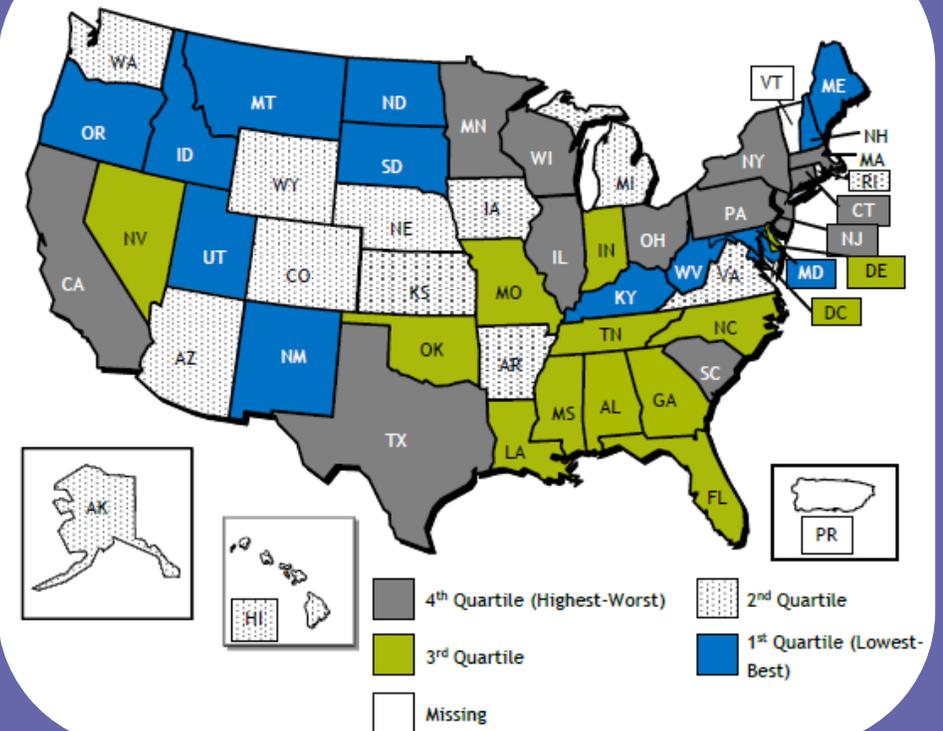
## Quality

Figure 9. Overall quality of care, by state, 2015-2017

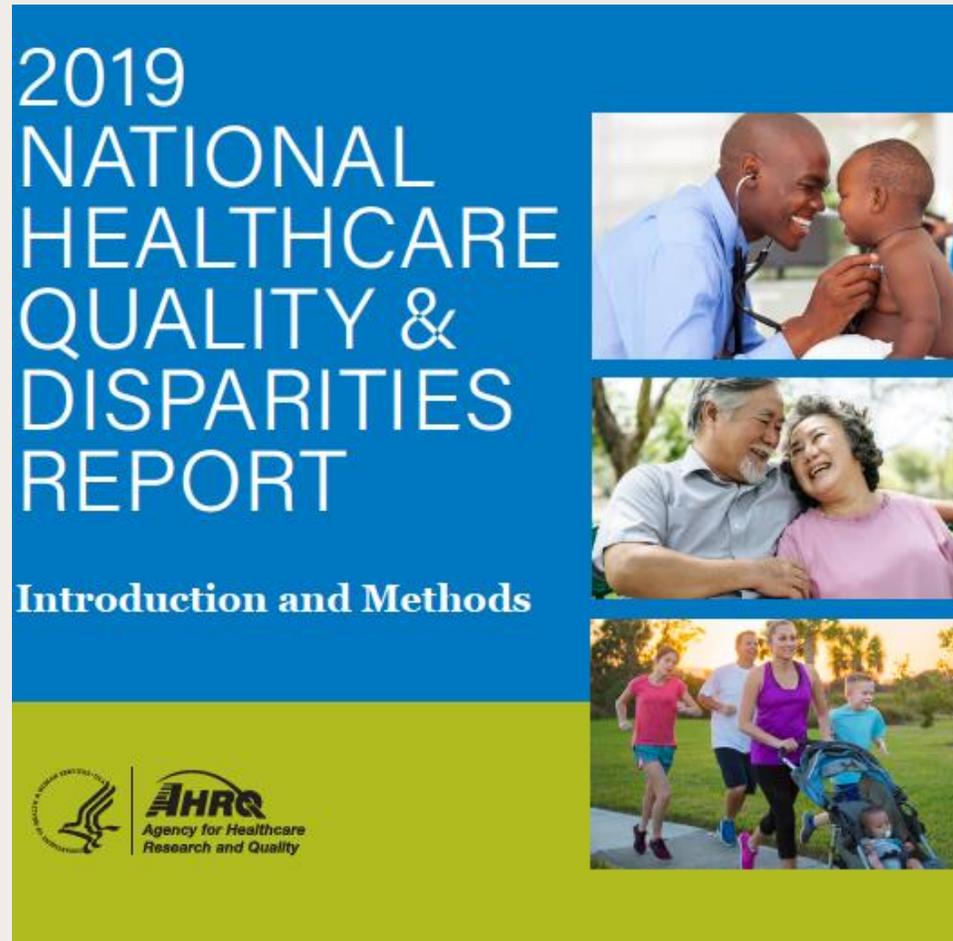


## Equity

Figure 10. Average differences in quality of care for Blacks, Hispanics, and Asians compared with Whites, by state, 2015-2017



# National Healthcare Quality and Disparities Report



Annual report by the Agency  
for Healthcare Research and  
Quality

Includes 250+ measures of  
health care access and  
quality from 36+ datasets



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<https://nhqrnet.ahrq.gov/inhqdr/reports/qdr>

# Healthy People 2030

Building a healthier future for all

**Health equity:** Attainment of the highest level of health for all people...valuing everyone equally with...societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities

**Health disparity:** A particular type of health difference that is closely linked with social, economic, or environmental disadvantage



# Who is at Risk for Experiencing Disparities?



- People from minoritized racial & ethnic groups
- People from minoritized sexual orientation and gender groups
- People with disabilities
- Women and children
- Older adults

- Immigrants
- People with challenging living conditions (e.g., homeless)
- Military Veterans
- People with serious mental illness
- People living in rural areas
- People with low income





health disparities in cardiovascular care

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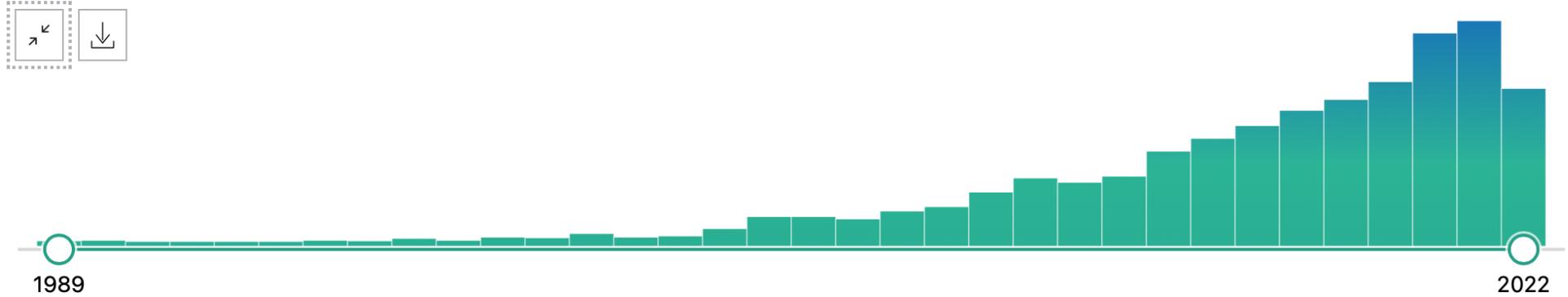
[User Guide](#)

Sorted by: Best match

RESULTS BY YEAR

2,531 results

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# The Disparity Issue

# Circulation

## FRAME OF REFERENCE

- Editor's Page**  
**Disparities in Cardiovascular Medicine**  
 MA Albert ... KE Watson 2319
- Paths to Discovery**  
**A Pioneer in Transplantation Genomics, Inclusion, and Diversity: A Conversation With Hannah Valentine, MBBS, MD**  
 HA Valentine and M Farr 2321
- On My Mind**  
**The Journey Toward Health Equity: Are We Nearing an Abyss or Ascending a Peak?**  
 CW Yancy 2327
- Perspective**  
**Sodium-Glucose Cotransporter-2 Inhibitors in Heart Failure: Racial Differences and a Potential for Reducing Disparities**  
 AA Morris ... J Butler 2329

## ORIGINAL RESEARCH ARTICLES

- Racial and Ethnic Differences in Presentation and Outcomes for Patients Hospitalized With COVID-19: Findings From the American Heart Association's COVID-19 Cardiovascular Disease Registry**  
 F Rodriguez ... TY Wang 2332
- Editorial**  
**To Solve Racial and Ethnic Disparities in COVID-19 Outcomes, Look Upstream for Solutions**  
 Y Commodore-Mensah and DC Crews 2343
- Racial and Ethnic Disparities in Heart and Cerebrovascular Disease Deaths During the COVID-19 Pandemic in the United States**  
 RK Wadhwa ... KE Joynt Maddox 2346
- Association of Serum Aldosterone and Plasma Renin Activity With Ambulatory Blood Pressure in African Americans: The Jackson Heart Study**  
 JJ Joseph ... SH Golden 2355

## ORIGINAL

- Editorial**  
**Physiological Treatment of My Patients: Time for Action**  
 BL Rayner and JD Spence
- Development and Validation of Machine Learning Models to Predict 10-Year Cardiovascular Disease Risk: A Multicohort Analysis**  
 MW Segar ... A Pankey
- Cost-Effectiveness of Hypertension Pharmacists in Black Barbershops**  
 KB Bryant ... BK Bellows
- Frontiers**  
**Racial Diversity Among American Cardiologists: Implications for the Past, Present, and Future**  
 AE Johnson ... JE South-Paul

## Research Letter

- Scaling Up Pharmacist-Led Blood Pressure Programs in Black Barbershops: Pilot Study**  
 DS Kazi ... K Bibbins-Domingo
- Diverse Racial/Ethnic Group Underrepresentation in High-Impact Journals**  
 A Sarraju ... F Rodriguez
- Imbalance in Heart Transplant to Heart Ratio Among African American, Hispanic, and White Patients**  
 K Breathett ... NK Swetzer

## JACC Focus Seminar Addresses Racial and Ethnic Disparities in CV Care

This nine-part focus seminar series examines care, including hypertension management, diabetes, and heart failure.

### Race, Ethnicity, and Cardiovascular Disease: JACC Focus Seminar

#### JACC FOCUS SEMINAR

George A. Mensah and Valentin Fuster

Journal of the American College of Cardiology

### Race, Ethnicity, Hypertension, and Heart Disease: JACC Focus Seminar

#### JACC FOCUS SEMINAR

Modele O. Ogunniyi, Keith C. Ferdinand, et al.

Journal of the American College of Cardiology

### Cardiovascular Impact of Race and Ethnicity in Heart Failure: JACC Focus Seminar

#### JACC FOCUS SEMINAR

Joshua J. Joseph, Prakash Deedwania, et al.

Journal of the American College of Cardiology

### Race and Ethnicity Considerations in Patients With Atrial Fibrillation: JACC Focus Seminar

#### JACC FOCUS SEMINAR

Rohit Mital, Michelle A. Albert, et al.

Journal of the American College of Cardiology

### Valvular Heart Disease in Relation to Race and Ethnicity: JACC Focus Seminar

#### JACC FOCUS SEMINAR

Julio A. Lamprea-Montealegre, Catherine M.

Journal of the American College of Cardiology

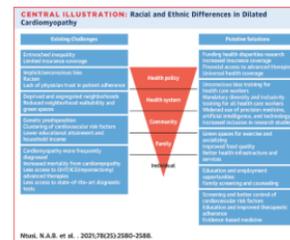
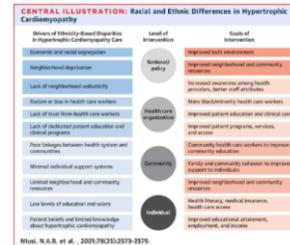
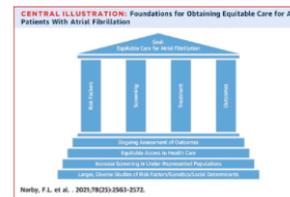
### Racial and Ethnic Considerations in Patients With Heart Failure: JACC Focus Seminar

#### JACC FOCUS SEMINAR

Faye L. Norby, Sumeet S. Chugh, et al.

Journal of the American College of Cardiology. 2021 Dec, 78 (25) 2505-2613

## JACC FOCUS SEMINAR: RACE, ETHNICITY, AND HEART DISEASE



### Racial and Ethnic Considerations in Atrial Fibrillation: JACC Focus Seminar

#### JACC FOCUS SEMINAR

Faye L. Norby, Sumeet S. Chugh, et al.

J Am Coll Cardiol. 2021 Dec

PREVIEW ABSTRACT

### Associations of Race and Ethnicity With Outcomes of Hypertrophic Cardiomyopathy: JACC Focus Seminar

#### JACC FOCUS SEMINAR

Ntobeko A.B. Ntusi and Keith C. Ferdinand

J Am Coll Cardiol. 2021 Dec

PREVIEW ABSTRACT

### Impact of Racial and Ethnic Considerations in Dilated Cardiomyopathy: JACC Focus Seminar

#### JACC FOCUS SEMINAR

Ntobeko A.B. Ntusi and Keith C. Ferdinand

J Am Coll Cardiol. 2021 Dec

PREVIEW ABSTRACT

# Circulation

## FRAME OF REFERENCE

- Editor's Page**  
**Toward a Broader Conceptualization of Disparities and Solutions**  
 MR Carnethon ... KE Watson 145
- On My Mind**  
**Far Apart, but Close at Heart: The Importance of Understanding Patient Barriers to Telehealth and Potential Solutions**  
 L Eiland and A Drincic 147
- Broadening the Pool of Mentors for Historically Underrepresented Trainees and Faculty in Cardiology**  
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- Achieving Health Equities in Indigenous Peoples in Canada: Learnings Adaptable for Diverse Populations**  
 PP Liu ... A King 153
- Leaving the Social Vacuum: Expanding Cardiovascular Guidelines to Embrace Equity**  
 JW Magnani and LC Brewer 156

## ORIGINAL RESEARCH ARTICLES

- Association of Neighborhood-Level Material Deprivation With Atrial Fibrillation Care in a Single-Payer Health Care System: A Population-Based Cohort Study**  
 H Abdel-Qadir ... DS Lee 159
- Editorial**  
**Whose Streets? Neighborhood-Level Determinants of Atrial Fibrillation Care**  
 UR Essien and AE Johnson 172
- Community-Based, Cluster-Randomized Pilot Trial of a Cardiovascular Mobile Health Intervention: Preliminary Findings of the FAITH Trial**  
 LC Brewer ... CA Patten 175

## ORIGINAL RESEARCH ARTICLES

- Differences in Comorbidities Explain Black-White Disparities in Outcomes After Femoropopliteal Endovascular Intervention**  
 AK Krawisz ... EA Secemsky 191
- Associations of Clinical and Social Risk Factors With Racial Differences in Premature Cardiovascular Disease**  
 MS Shah ... SS Khan 201
- Disparities in Cardiovascular Mortality Between Black and White Adults in the United States, 1999 to 2019**  
 AN Kyjwazi ... RK Wadhwa 211
- Racial and Ethnic Differences in All-Cause and Cardiovascular Disease Mortality: The MESA Study**  
 WS Post ... RL McClelland 229
- Socioeconomic Deprivation: An Important, Largely Unrecognized Risk Factor in Primary Prevention of Cardiovascular Disease**  
 DM Kimmenal ... ASV Shah 240
- Association of Extreme Heat and Cardiovascular Mortality in the United States: A County-Level Longitudinal Analysis From 2008 to 2017**  
 SAM Khattana ... PW Groeneweld 249

## CORRESPONDENCE

- Research Letter**  
**Evolving Trends and Widening Racial Disparities in Children Listed for Heart Transplantation in the United States**  
 MM Zubair ... RW Kim 262
- Race and Ethnicity Stratification for Polygenic Risk Score Analyses May Mask Disparities in Hispanics**  
 SL Clarke ... TL Assimes 265



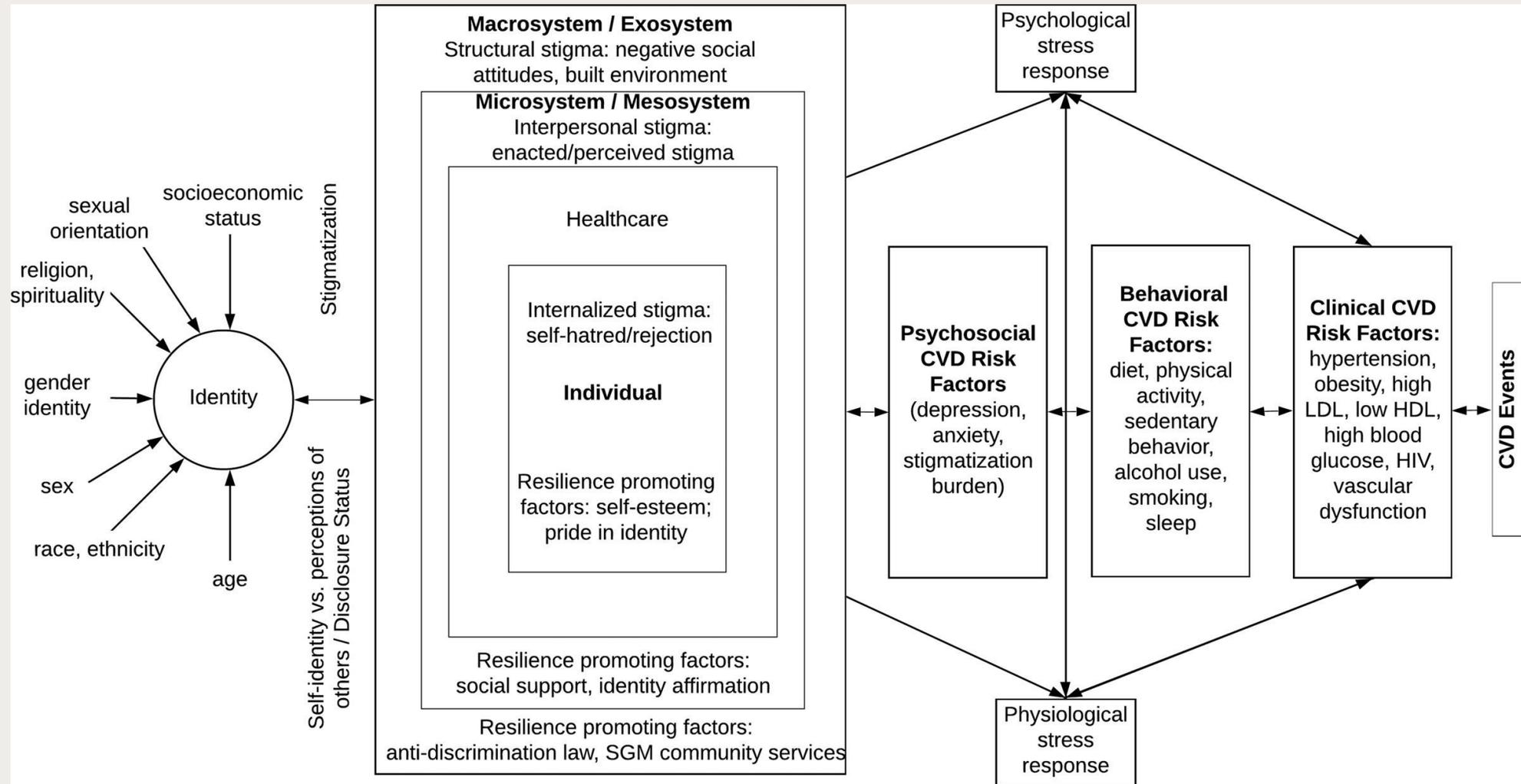
Volume 146, Number 3, July 19, 2022

ISSN 0009-7322  
 www.ahajournals.org/journal/circ

ABSTRACT | FULL TEXT | PDF



# Assessing and Addressing Cardiovascular Health in People Who Are Transgender and Gender Diverse



# CVD Risk Factors and MI in the Transgender Population

- Trans men had a 2-fold MI over cis men
- Trans men had a 4-fold MI over cis women
- Trans women had 2-fold MI over cis women
- Trans women did not have a significant increase over cis men

Alzahrani, et al. *Circ. cardiovasc. qual. outcomes.* 2019;12(4):e005597.



# CVD disparities in pregnancy

- Non-white women are two to three times more likely to die from pregnancy
- Black and non-White Hispanic more likely to have
  - Preeclampsia
  - Cardiomyopathy
  - Pulmonary embolism
  - Hypertensive disorders of pregnancy
- Asian and Pacific Islander women disproportionately higher risk of stroke
- These findings are likely underreported

Gomez et al. J Am Heart Assoc. 2022 Mar;11(5):e024776.



# Implications of the COVID-19 pandemic

- Decreased PCI among minority populations
- Increased risk of out of hospital cardiac arrest
- Racial and ethnic minority individuals with acute myocardial infarction were
  - Less likely to receive guideline-directed therapies
  - More likely to have early mortality
  - And these disparities worsened during the COVID-19 period compared with prior period



# Sex-Based Disparities in Cardiovascular Care

Women with premature ASCVD were more likely to report:

- Worse physical and mental health
- Cost-related medical nonadherence

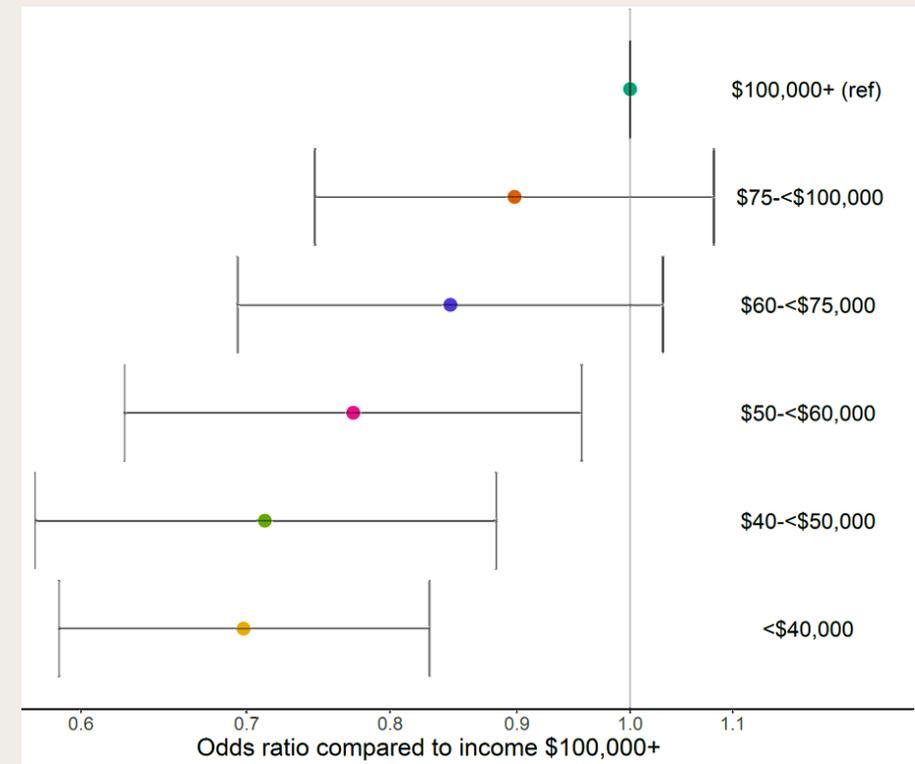
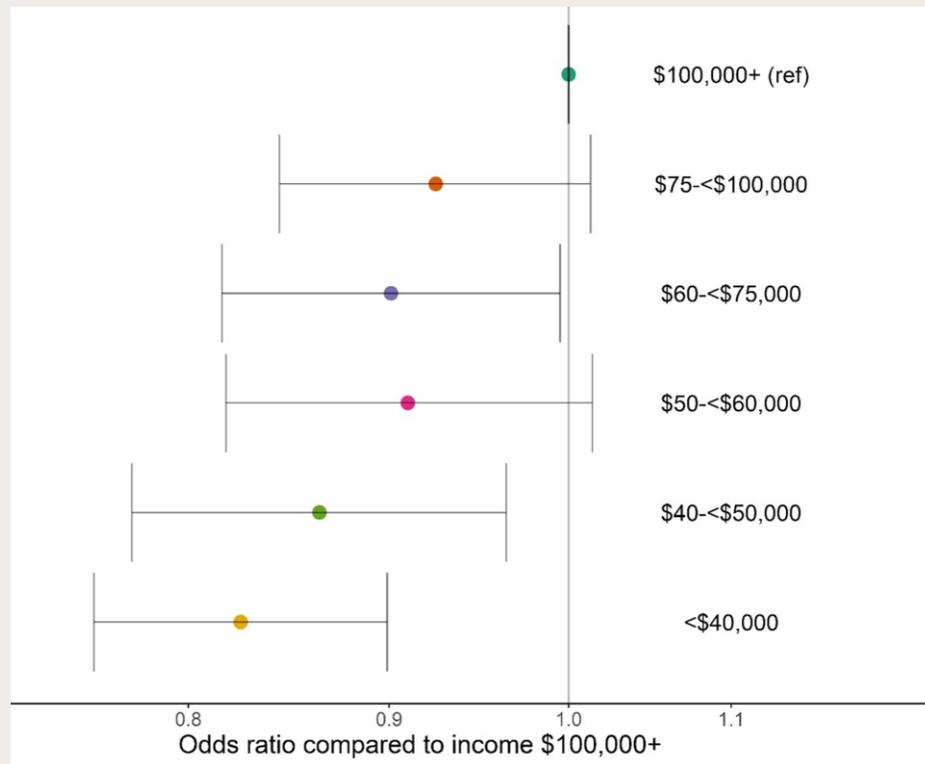
**Table 2. Odds Ratios (ORs) for the Prevalence of Care Delivery–Associated Risk Factor Profile and Indicators of Physical and Mental Well-being for Women vs Men (Reference Men)**

Risk factor	Unadjusted		Adjusted <sup>a</sup>	
	OR (95% CI)	<i>P</i> value	OR (95% CI)	<i>P</i> value
Self-reported poor physical health	1.50 (1.35-1.66)	<.001	1.39 (1.09-1.78)	.008
Self-reported clinical depression	1.93 (1.75-2.12)	<.001	1.73 (1.41-2.14)	<.001
Self-reported poor general health	1.22 (1.10-1.37)	<.001	1.22 (0.95-1.57)	.11
Self-reported having never received emotional support	0.59 (0.23-1.53)	.28	0.36 (0.10-1.31)	.12
Self-reported inability to see physician due to cost	1.56 (1.13-2.14)	<.001	4.52 (2.24-9.13)	<.001
Self-reported cost-related medication nonadherence	1.24 (1.12-1.38)	<.001	1.42 (1.11-1.82)	.005



# Income and medication use, adherence

- For incident HFrEF, lower household income is associated with
  - Decreased likelihood of a sacubitril/valsartan claim
  - Decreased likelihood of medication adherence



← Thread



Jenni Tabler, PhD  
@jenni\_tabler

I'm just a girl standing in front of academic twitter begging you to stop saying "thrilled to announce x" when x is about you. a privileged academic. receiving funding/paper and some horrific for rights.

10:12 PM · Jul 7, 2022 ·

7 Retweets 4 Quote Tw



Jenni Tabler, PhD @jenni\_tabler · Jul 7

Replying to @jenni\_tabler

Here are some alternatives: "we received funding to try to address x, which is horrible hot garbage & we are miserable that we need to study it"

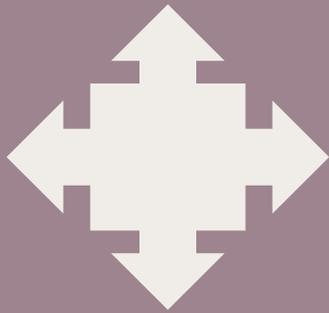
"We published a paper on x & it sucks this exists to be studied but here is what we found"



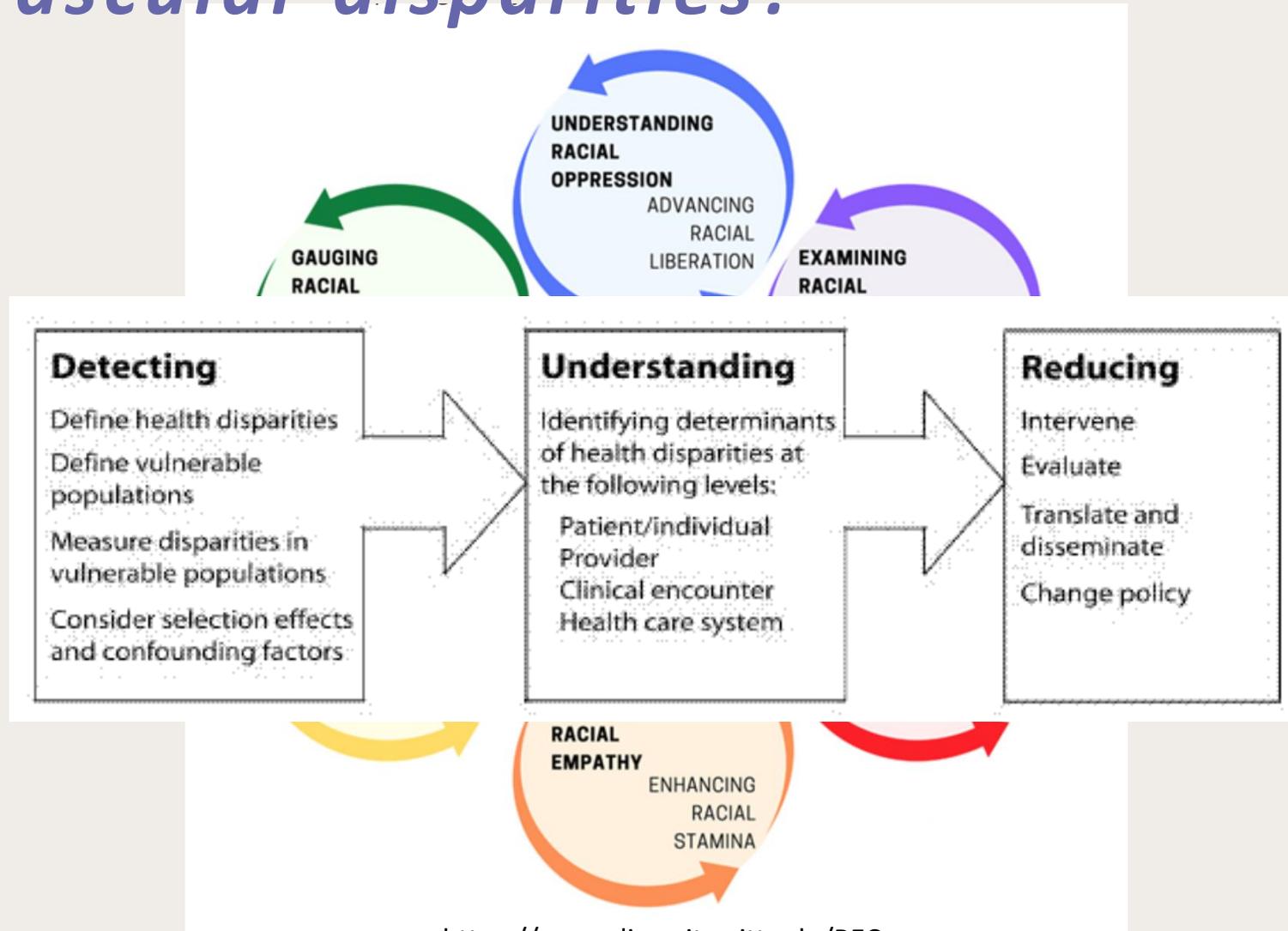
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# An existential crisis?

“...it seems ontologically and epistemologically foolish, at best, to ignore the visceral knowledge that we, Postcolonial scholars, walk a blurry line between empowerment and exploitation of the downtrodden”



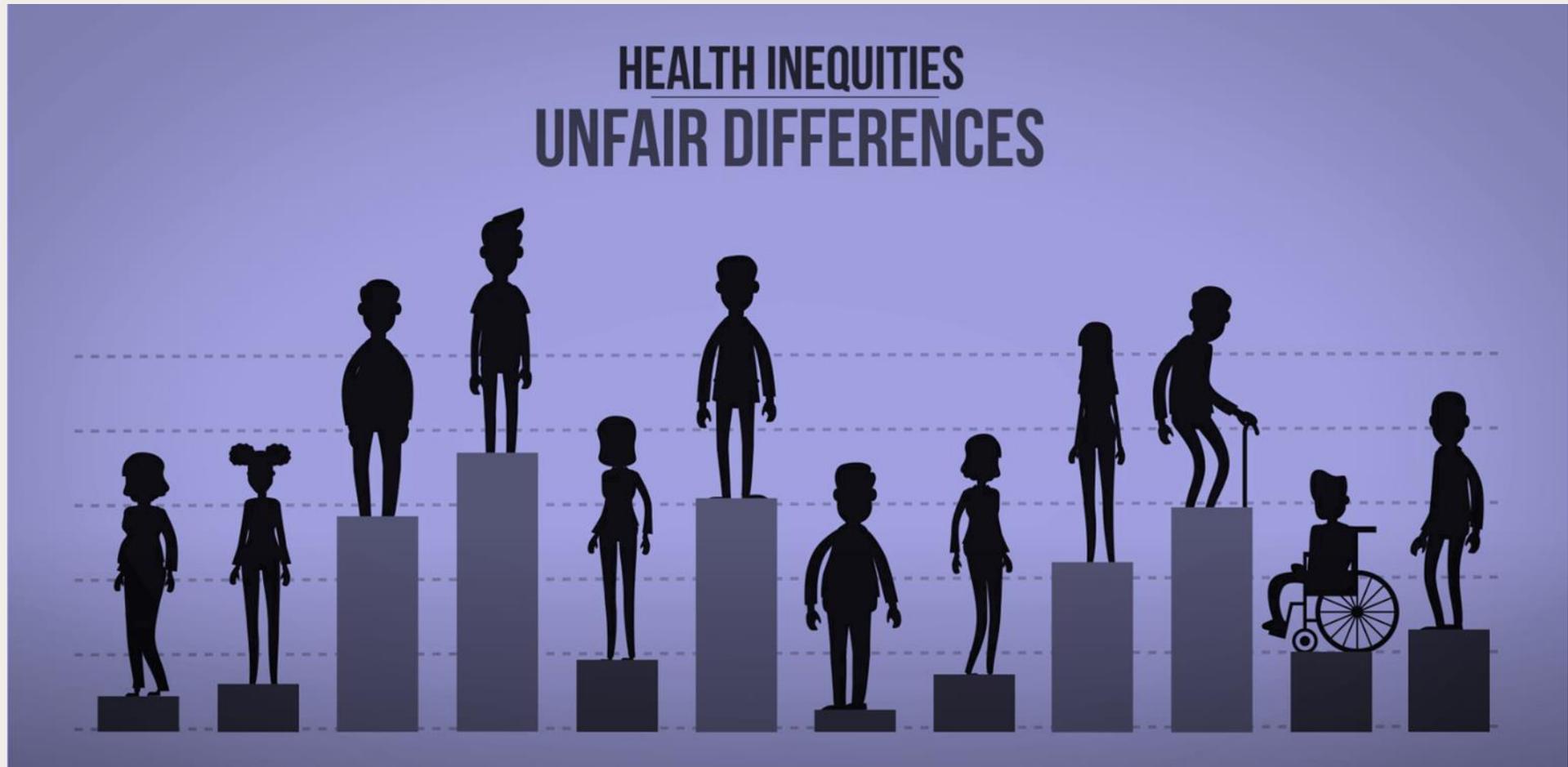
# What, to the health equity researcher, are cardiovascular disparities?



<https://www.diversity.pitt.edu/REC>  
Kibourne, et al. Am J of Pub Health. Vol 96, No. 12. 2006



# What can healthcare professionals do to address disparities?

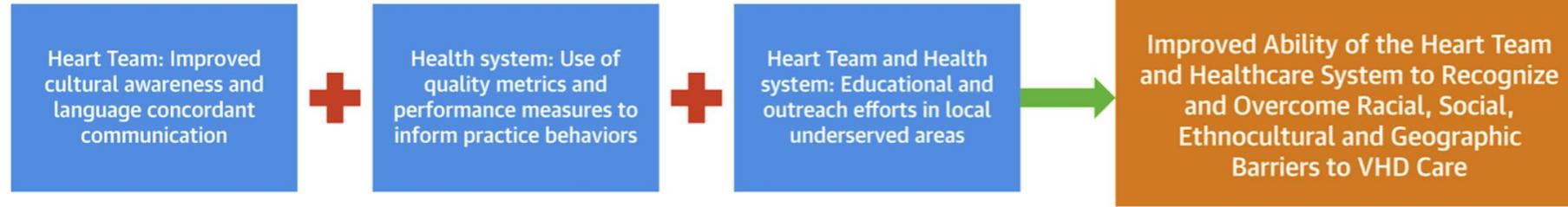


# Equity in randomized clinical trials



# Equity in procedural care delivery

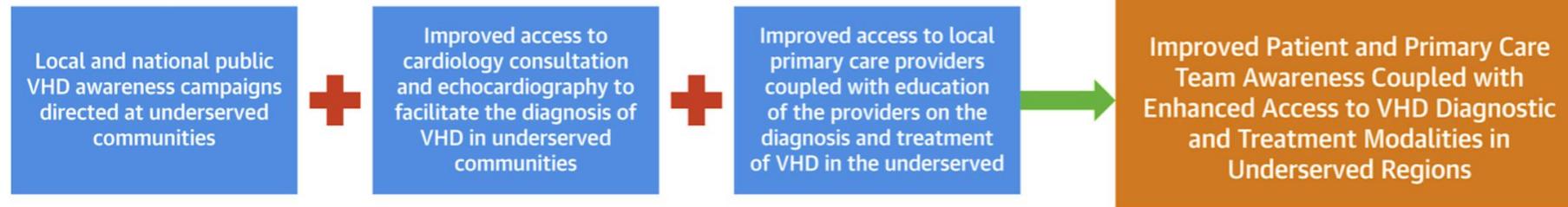
## Heart Team and Health System



## Clinical Research



## Patient and Primary Care Team



# To resolve current and future health crises, center diversity, equity, and inclusion

- Social and structural factors are associated with clinical outcomes
- Intentional funding is needed to demonstrate transparency and trustworthiness
- Sustained and reinforced initiatives are needed from funders, researchers, and academic institutions



# Avoid the conflation of healthcare **diversity** and health **equity** efforts

- Give adequate attention and resources to both imperatives
- Take the time to engage appropriate funders and invested parties
- Develop strategies informed by evidence and best practices

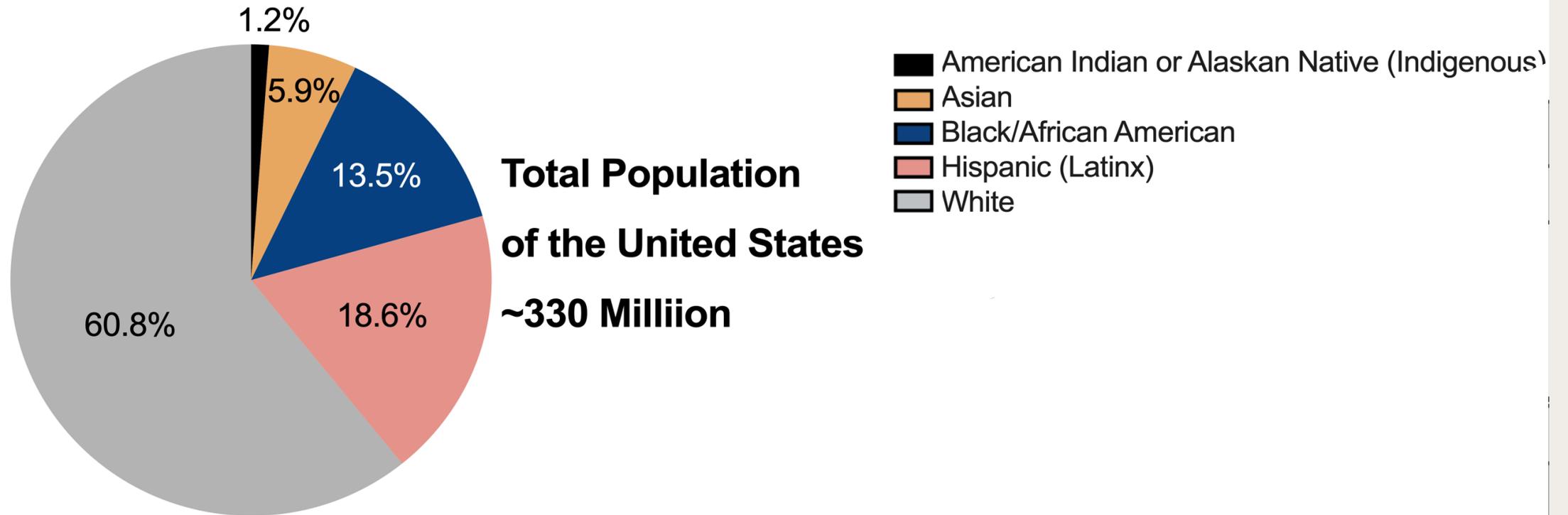


# DEI definitions

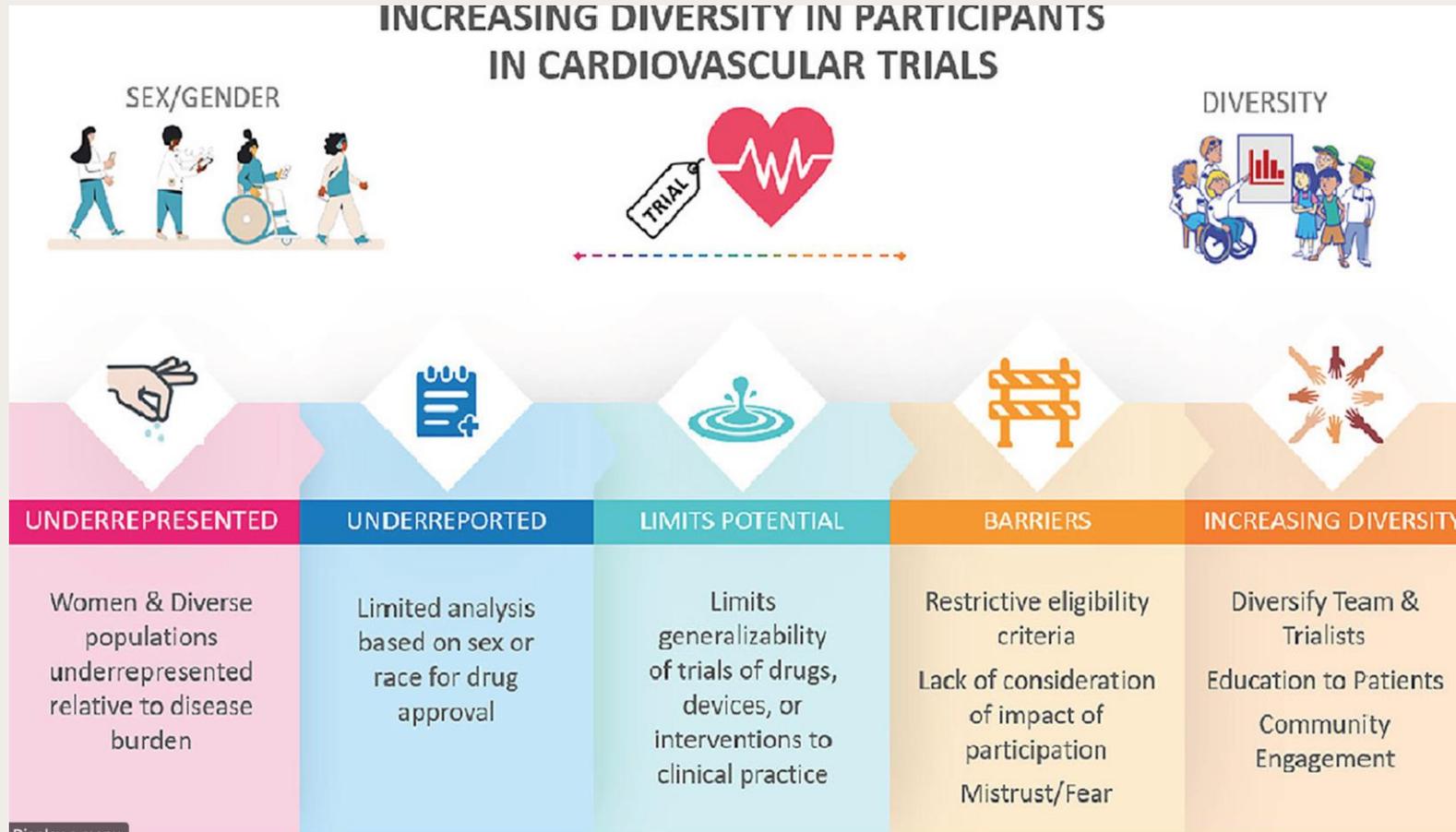
- **Diversity-** the spectrum of individual differences and the corresponding group memberships and identities that human beings have in society
- **Equity-** the policy or practice of accounting for the differences in each individual's starting point when pursuing a goal or achievement, and working to remove barriers to equal opportunity, as by providing support based on the unique needs of individual students or employees
- **Inclusion-** the practice or policy of including and integrating all people and groups in activities, organizations, political processes, etc., especially those who are disadvantaged, have suffered discrimination, or are living with disabilities



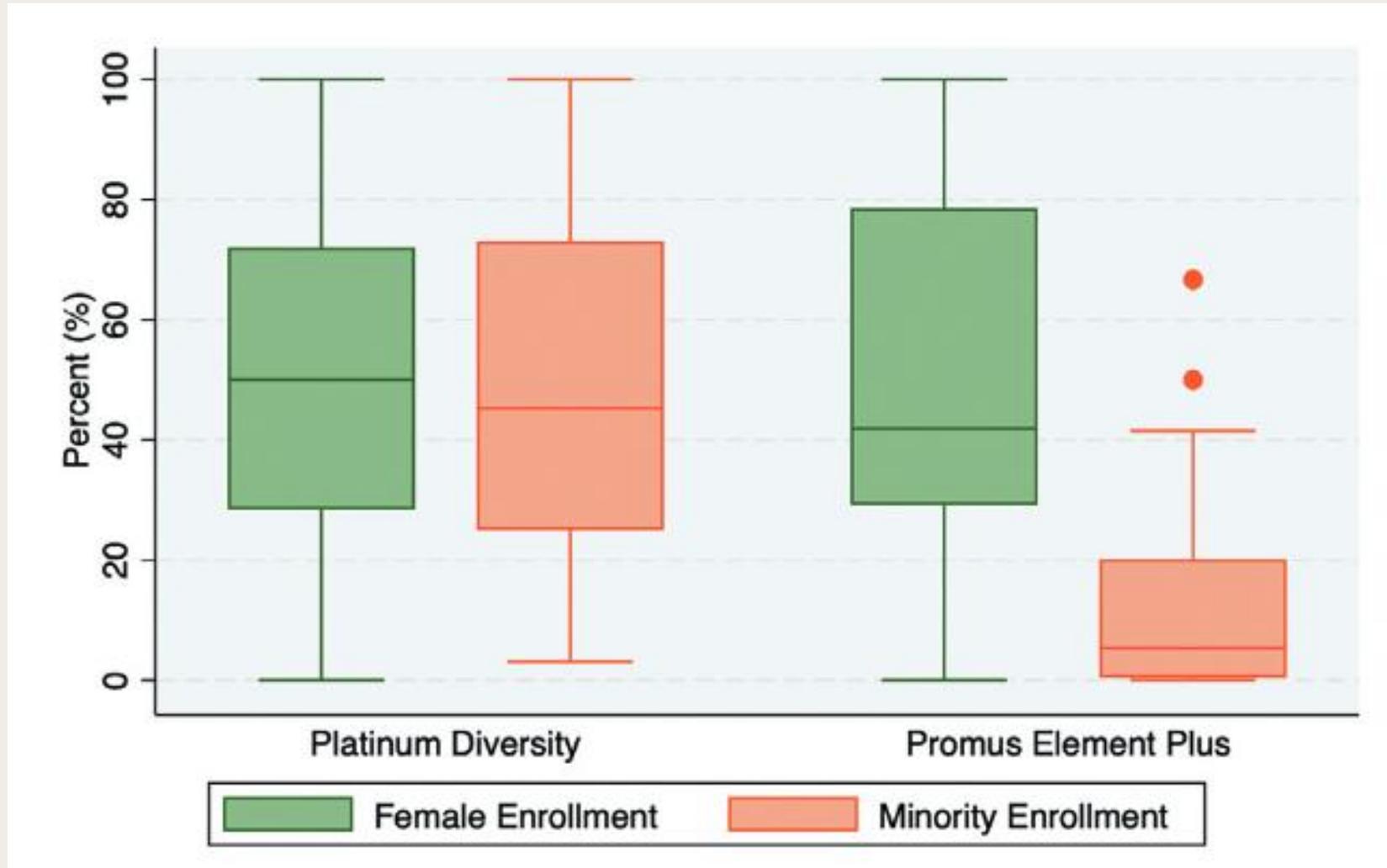
# Racial diversity in the US



# Diversity of participants in clinical trials



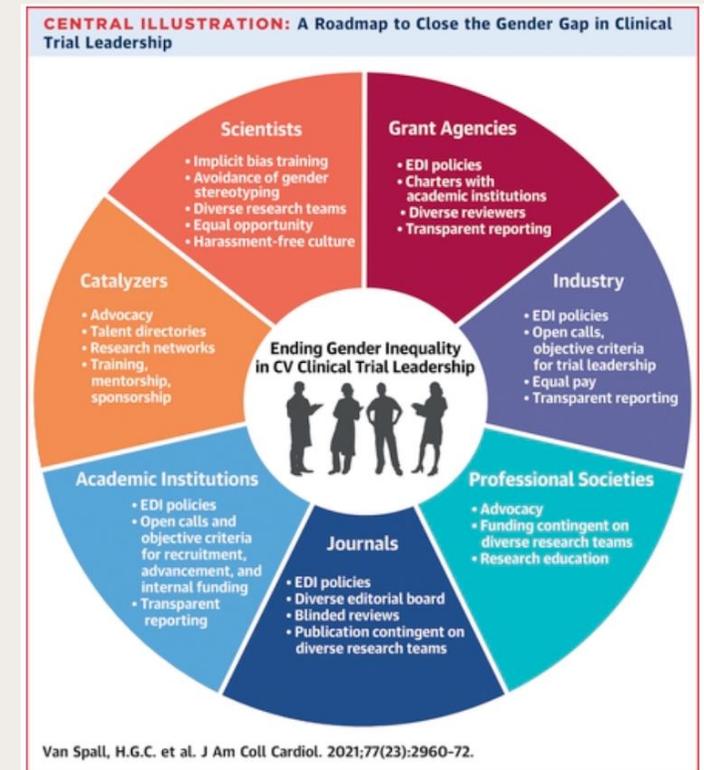
# Diversity of participants in clinical trials



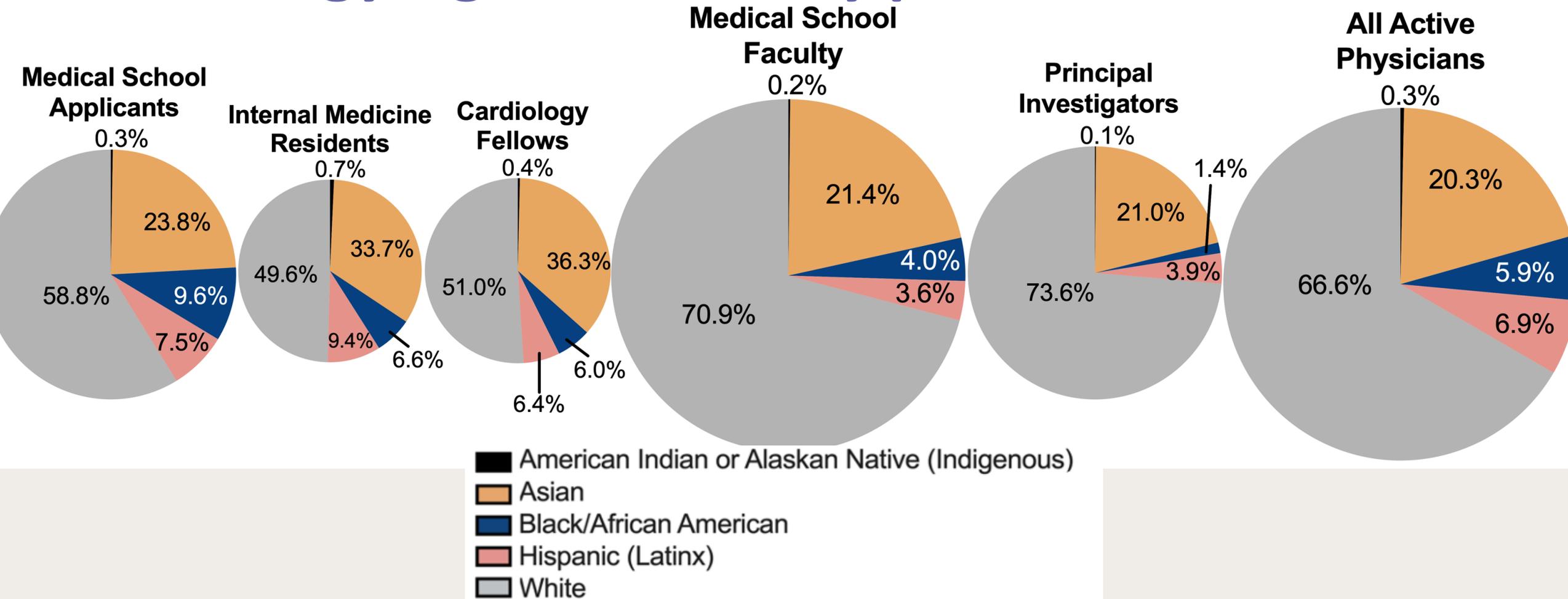
# Diversity among leaders of clinical trials

## Diverse Scientists → Diverse Participants → Generalizability

- White scientists who research health disparities are less likely to have their research funded
- White researchers were 2 times more likely to have their disparities research funded than Black
- Diversify the pool of peer reviewers by race and ethnicity
- Increase the diversity of NIH investigators through career development support



# Cardiology's got a diversity problem



# Creating inclusive working environments

02-22-21

## The toll of code-switching and the tyranny of culture fit

Underrepresented people must often change fundamental aspects of who they are to survive at work. If companies truly want to build more inclusive cultures, it means challenging many assumptions.



[Source photos: CarlosDavid.org/iStock; m-imagephotography/iStock; Chaay\_Tee/iStock]

- Avoid the apprenticeship mindset
- Using inclusive, intentional language
- Engagement >> burnout
- Creation of community



@AmberJohnsonMD

# Solutions for retention and preventing attrition from academic institutions

- Intentional efforts
- Academic medicine career pathways
- Regional and national peer affinity networks
- Mentorship and career development
- Financial support



# Summary

- **Equity is the attainment of the highest level of health for all people**
- **Disparities involve unequal, inequitable care and often are matters of social injustice**
- **Trends in CVD disparities persist in 2022**
- **Barriers to cardiovascular health equity include poor provision of care, lack of empathy, and biased research**
- **Strategies to overcome disparities include diversification of the medical field**



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