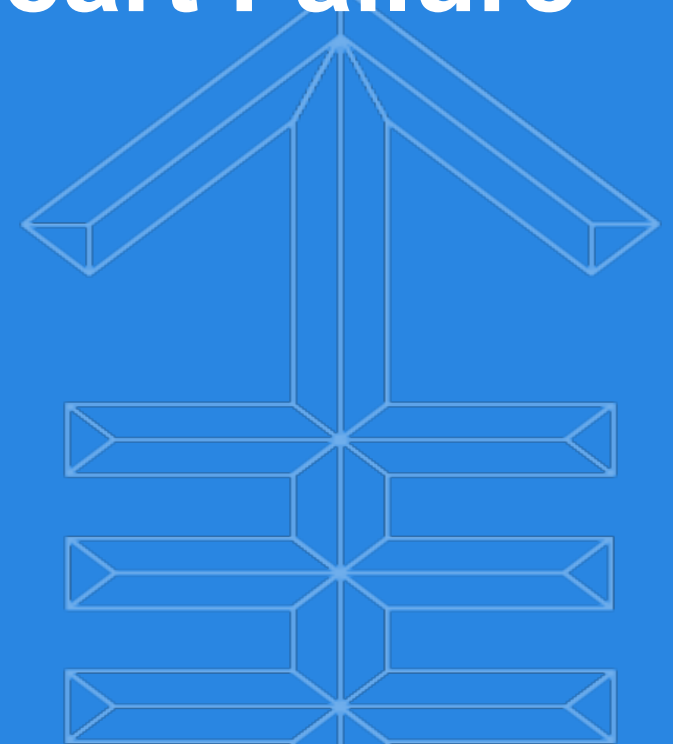




Memorial Sloan Kettering
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Health Equity Opportunities: Heart Failure in Black Women

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Case study: Breast Cancer

- 45y/o premenopausal Black woman. No CVD risk factors. Last MD visit 5 years ago.
- Palpates an axillary mass.
- 2 mths later: Seen by MD. Referred for US and mammogram-revealed 3 masses.
- BX: Invasive ductal carcinoma ER 90% PR 20% HER2-.
- 2 mths later: PET-CT 1.8 cm L breast nodule 2 large axillary lymph nodes.
- 2 mths later: Sees surgeon.
- 1 mth later: Left partial mastectomy and axillary dissection with 3/17 nodes positive.



CASE: Part 2

- Pre- treatment echo was normal.
- Received dose dense doxorubicin(240mg/m²), cyclophosphamide and Taxol f/b letrozole.
- Followed for 2 years p treatment and then was lost to follow-up.
- 2 years later she then presented with progressive SOB.
- TTE: severely reduced LV function EF17%, grade III diastolic dysfunction.

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CASE: Part 3

- Pharm stress no evidence of ischemia
- Started on diuretics, lisinopril and metoprolol. Subsequently lisinopril was changed to Entresto.
- Employed as a home health aid – needed documentation on physical restrictions. Ultimately, she went on disability. Concerned about losing job altogether.
- EF remained unchanged. Recommendation AICD. Initially declined do to concerns about how it would be viewed by her employers.

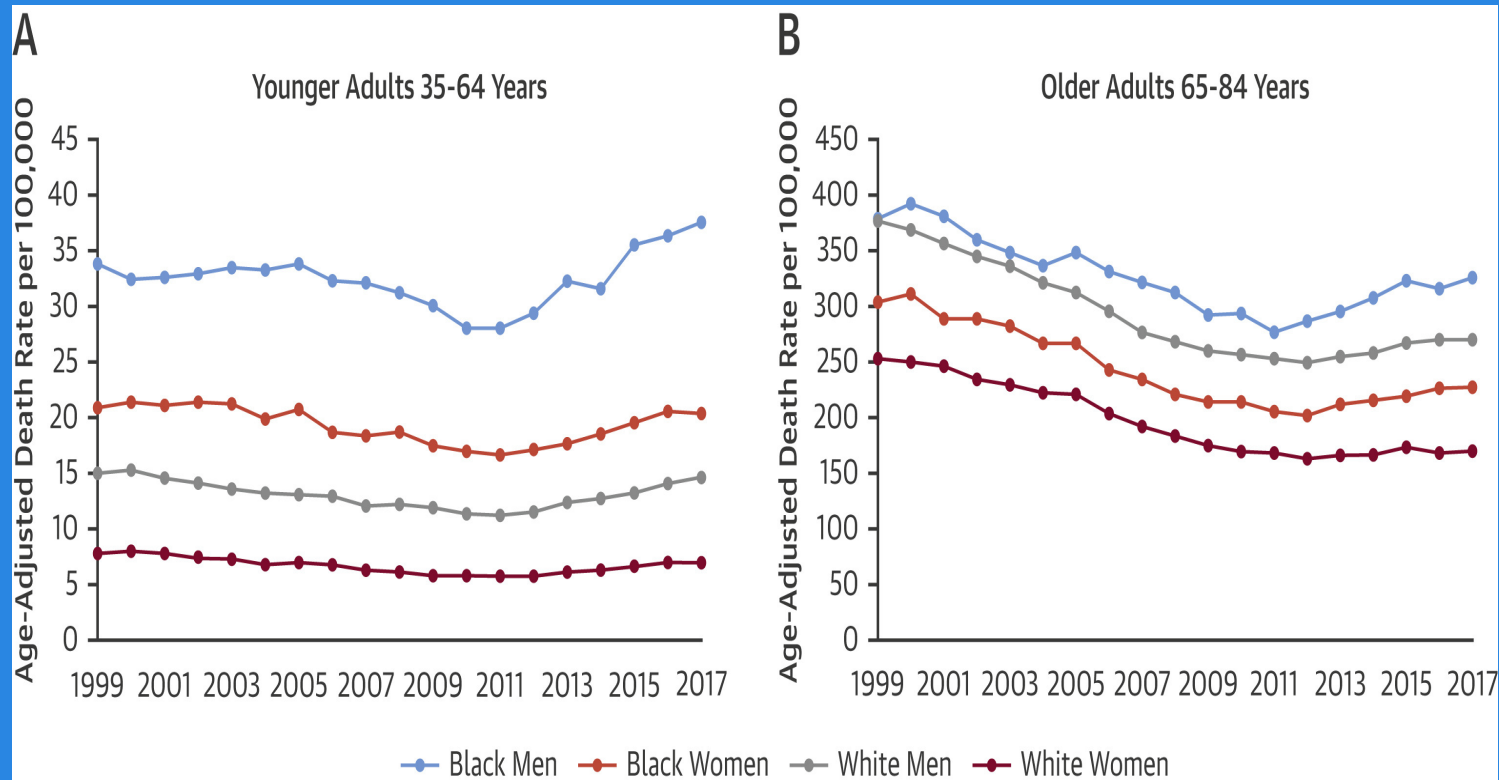


Heart Failure(HF) in Black Women

- BW have approx. 3 x higher age-adjusted HF mortality rates than women from other racial and ethnic groups
- Higher lifetime risk of developing HF
Multi-Ethnic Study of Atherosclerosis (MESA): AA had the highest risk of developing HF.
Atherosclerosis Risk in Communities (ARIC) Community Surveillance: AA had the highest burden of new-onset HF cases and the highest age-adjusted 30-day case fatality rate in comparison to W (both sexes)
- Disparities in the incidence of heart failure most prominent at young ages.*



Age-Adjusted HF-Related CVD Mortality Rates in the United States, 1999 to 2017



Differences in Heart Failure Events

- HF hospitalization rates for BW approx. 2.5x higher than WW
- Incidence, prevalence, and prognosis of HF are less favorable among Black Americans and are largely attributable to the higher burden of traditional risk factors
- Blacks have higher rates of both HFpEF and HFrEF
- Black women are more likely to develop HFrEF from anthracyclines and from HER2-targeted treatment, even after controlling for relevant cardiovascular risk factors



Impact of Risk Factors

- Hypertension is arguably the most potent risk to the cardiovascular health of Black Americans, as well as the greatest area of opportunity for the prevention of disease if effectively managed and prevented.
- Reasons posited for the poorer control of elevated BP among Black Americans usually focus on patient-related factors (e.g., adherence issues, dietary indiscretion), provider behavior (e.g., inertia or poor regimen choices), or blunted efficacy of some widely used drug classes (e.g., ACE inhibitors)
- Women's Health Initiative found that excess risk of HF in Black women was largely due to NIDDM and lower household income



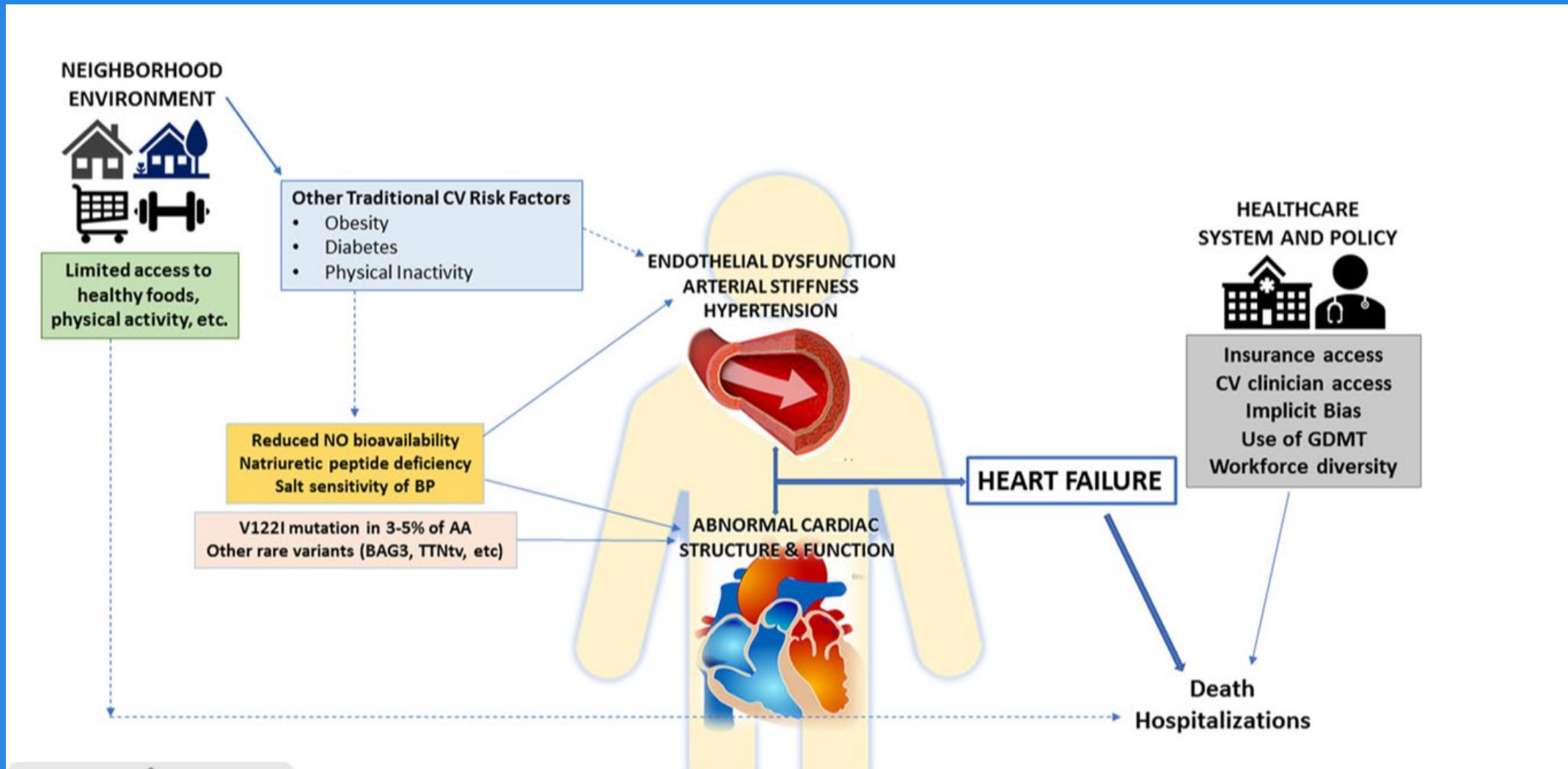
Unique Determinants of HF Risk in Blacks

- Blacks generate more oxidative stress -> enhanced in activation of nitric oxide which is a potent vasodilator. Contributes to more severe hypertension.
- Blacks have greater arterial afterload measured as higher SVR decreased compliance
- Increased prevalence of LVH in Blacks even after adjusting for CV risk factors
- Blacks have lower aldosterone levels -> differences in diuretic efficiency
- Blacks have approx 3 times the risk of developing dilated cardiomyopathy
- Black women more likely to have peripartum cardiomyopathy and more severe disease



Understanding the Complexity of Heart Failure Risk and Treatment in Black Patients

Nayak et al CIRCHEARTFAILURE.2020



Beyond Traditional CV Risk Factors

- One analysis held that modifiable risk factors account for 69% incident HF in Blacks and 49% in Whites
- Disparities exist even after differences in risk factors and access to health care are taken into account
- Unaccounted factors: access to care and systemic issues, social determinants of health such as income/education/ place of residence/ implicit bias/ chronic stress



African Americans Are Less Likely to Receive Care by a Cardiologist During an Intensive Care Unit Admission for Heart Failure

- Among patients admitted to an ICU for HF, African Americans were less likely than Caucasians to receive primary care by a cardiologist. Primary care by a cardiologist was associated with higher survival for both Caucasians and African Americans.

Breathett et al, JACC Heart Fail. 2018



Identification of Racial Inequities in Access to Specialized Inpatient Heart Failure Care at an Academic Medical Center

- Admission to the cardiology service was independently associated with decreased readmission within 30 days, independent of race
- Black and Latinx patients were less likely to be admitted to cardiology for HF care. This inequity may, in part, drive racial inequities in HF outcomes

Eberly, CIRCHEARTFAILURE. Epub 2019.



Association of Gender and Race With Allocation of Advanced Heart Failure Therapies

- In a qualitative study of 46 health care professionals, there was more bias against women compared with men when evaluating appearance and social support, particularly among African American women. Final recommendations were not different for groups defined by gender or race; all were offered ventricular assist devices rather than transplantation during interviews
- Although gender and race were not associated with allocation of advanced heart failure therapies in this study, there was evidence of bias, which could contribute to delayed and lower allocation of advanced therapies to women.

Breathette et al, JAMA Netw Open. 2020



What's Missing?

- Need for research / more data on impact of:
 - Social & cultural environment on uptake and sustainability of preventive interventions
 - Genomics
 - Pharmacogenetics
 - Behavior
 - Impact of environmental/ biopsychosocial milieu



Development and Validation of Machine Learning–Based Race-Specific Models to Predict 10-Year Risk of Heart Failure: A Multicohort Analysis

- Among the risk factors, natriuretic peptide levels were the most important predictor of HF risk across both races, followed by troponin levels in Black and ECG-based Cornell voltage in White individuals.
- Other key predictors of HF risk among Black individuals were glycemic parameters and socioeconomic factors. In contrast, prevalent cardiovascular disease and traditional cardiovascular risk factors were stronger predictors of HF risk in White adults.

Segar et al, Circulation 2021

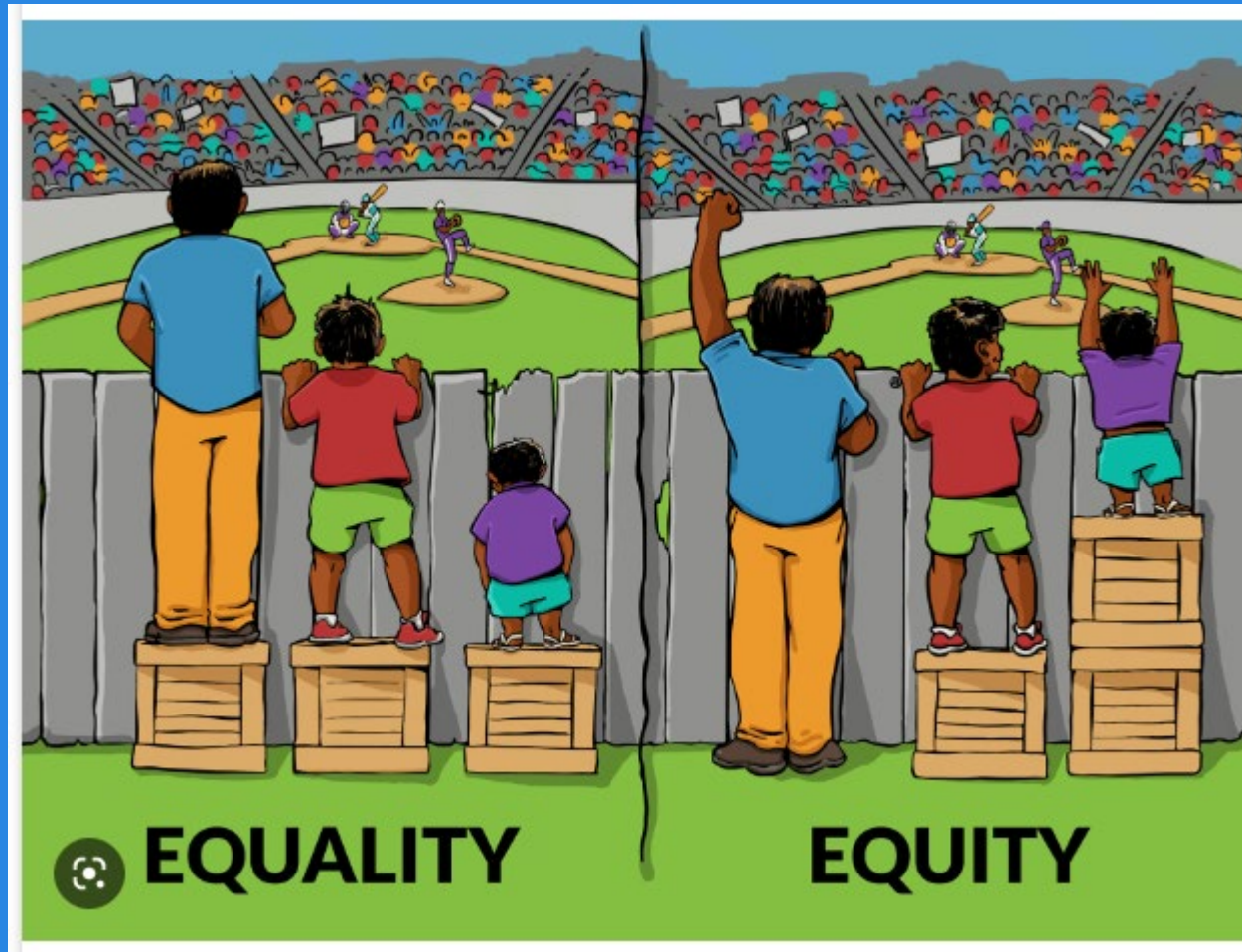


Closing Gaps

- Substantial mortality burden of HF, population-wide policy measures are urgently needed to eliminate racial disparities and target individuals earlier in life for HF prevention
- Race is an important variable to study; most health disparities are related to social determinants of health rather than biological variables.
- Health is strongly determined by access to educational, social, and economic opportunities. These include the availability of resources to meet basic needs such as safe housing and access to healthy foods, education, and job opportunities which affect economic prospects, access to quality health care, and socioeconomic conditions such as poverty.



Goal: To Achieve Health Equity





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