

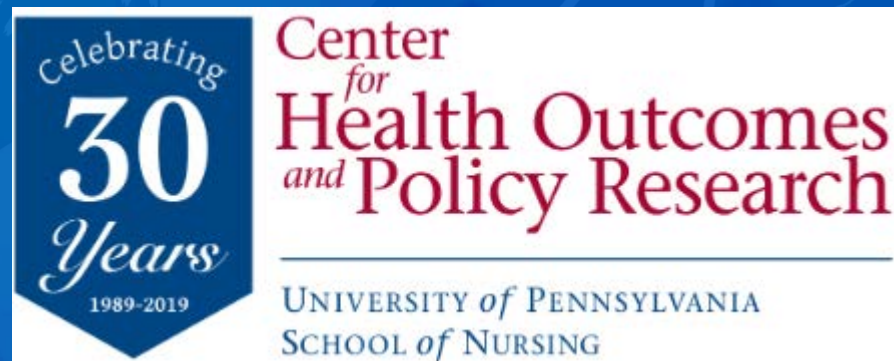
# Influence of Nurse Practitioner Practice Restrictions on Chronic Disease Disparities

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# Acknowledgements

- **Collaborators:** Heather Brom, Lusine Poghosyan, Jacqueline Nikpour, Jessie Chittams
- **National Council of State Boards of Nursing Center for Regulatory Excellence** (Brooks Carthon, Poghosyan, MPI)
  - *Influence of Nurse Practitioner Practice Restrictions on Chronic Disease Health Disparities*
- **National Institutes of Nursing Research** (R01NR014855; Aiken, PI)

# Coronary artery disease (CAD) & disparities

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Most prevalent heart disease in U.S.

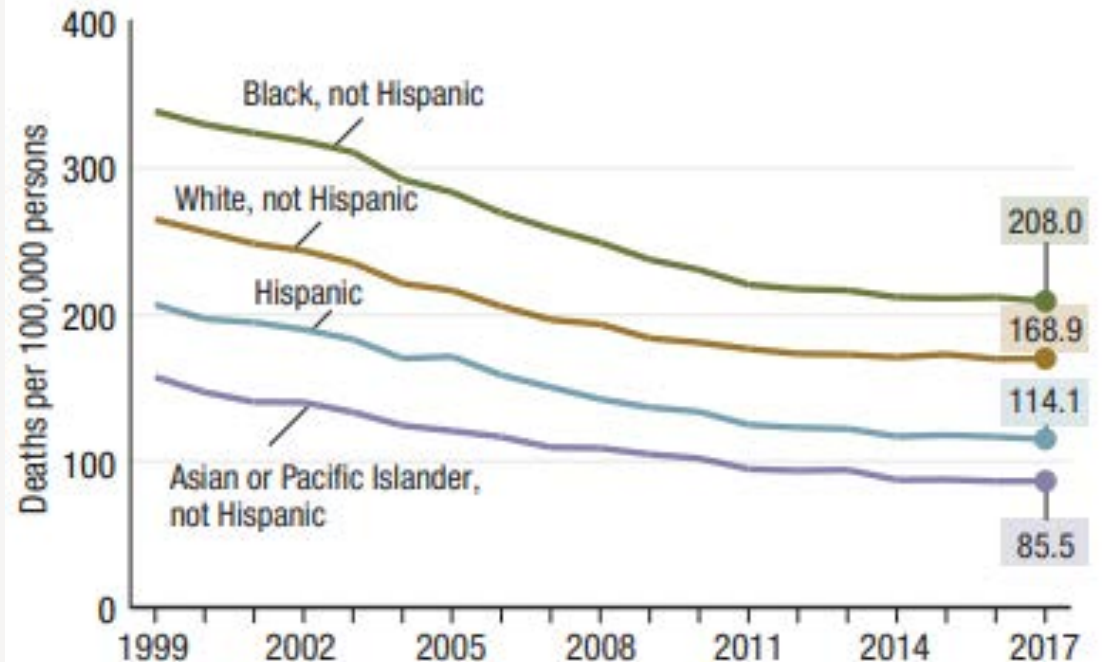
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Leading cause of death in the U.S.

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Requires lifestyle modifications, routine cholesterol screening and interventions for dyslipidemia

**Age-adjusted death rates for heart disease, by race and Hispanic origin: 1999–2017**



Source: Centers for Disease Control. (2019). *Health, United States Spotlight*. Racial and Ethnic Disparities in Heart Disease.

# CAD disparities



**PATIENT FACTORS**



**PROVIDER FACTORS**



**SETTINGS WITH  
FEWER RESOURCES**

**Nurse  
practitioner-  
delivered  
care**

Majority of NPs deliver primary care

Numerous studies demonstrate that NPs deliver high quality care

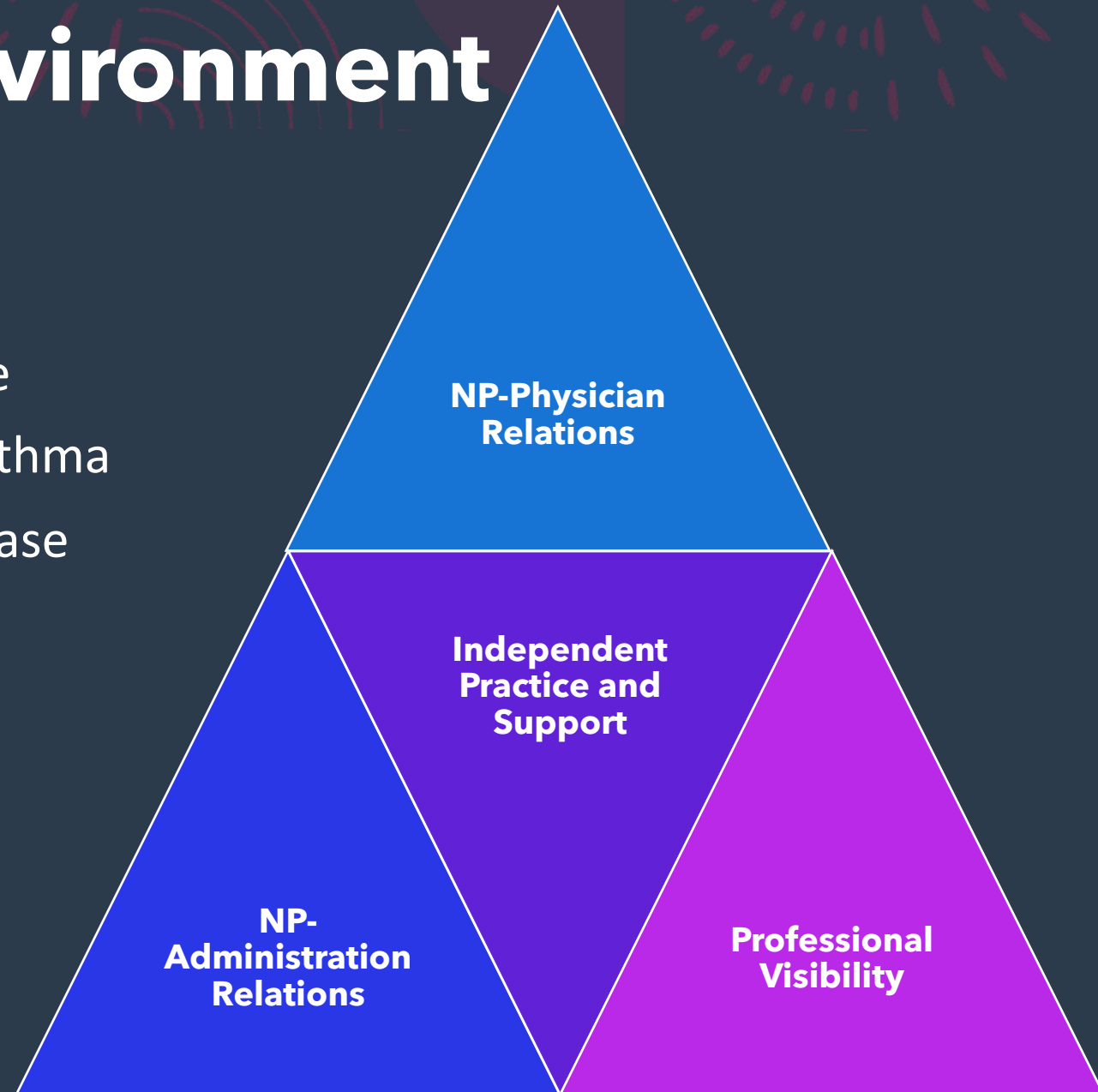
Constraints to NP-delivered care

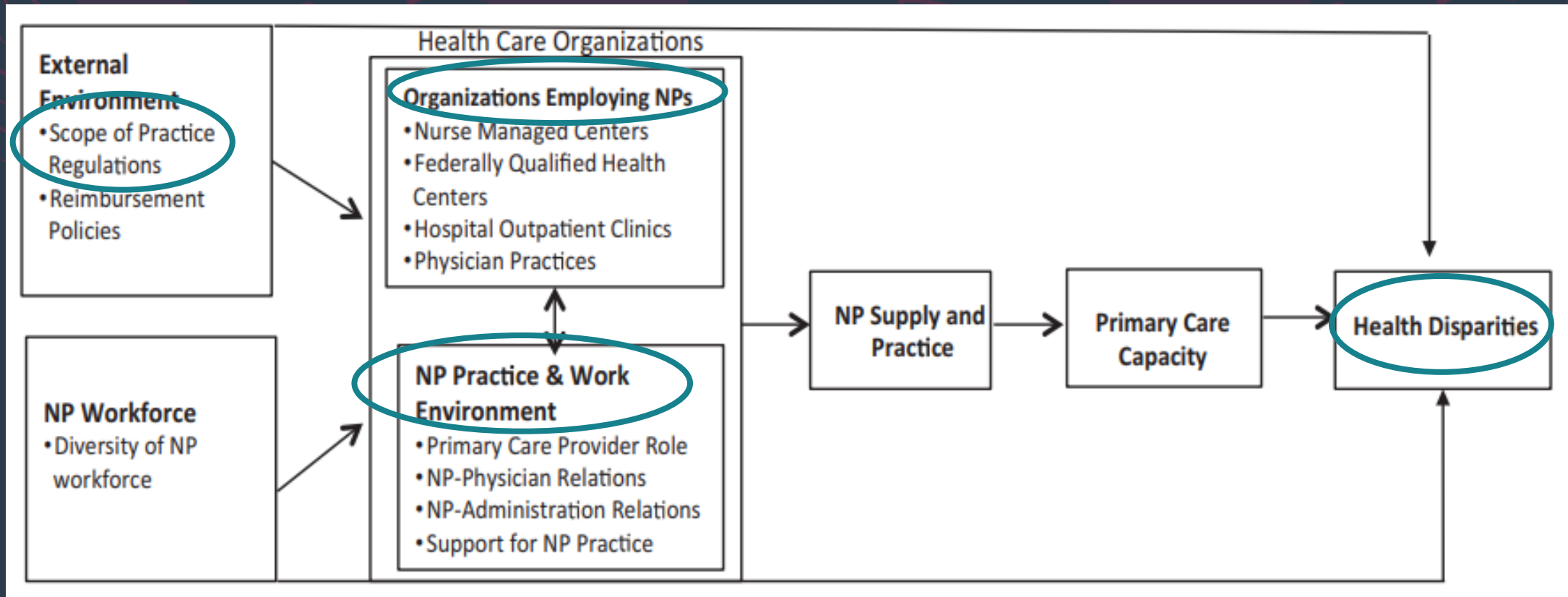
Restriction in scope of practice

Unsupportive practice environments

# The NP Practice Environment

- Better practice environments
  - ↑ provision of patient centered care
  - ↑ prescribing of medications for asthma
  - ↑ screening for cardiovascular disease





# The NP Health Disparities Model

(Poghosyan & Brooks Carthon, 2017)

***Research question:** Does the NP practice environment reduce racial disparities in LDL cholesterol screening between Black and White CAD patients?*



# Methods

## Cross-sectional design

- RN4CAST-US NP survey (2015-2016)
- SK&A physician database (2016)
- Medicare claims (2016)

## Setting & sample

- 456 primary care practices & 502 NPs across 4 states (CA, FL, NJ, PA)
- 111,911 CAD patients
  - 6% Black and 94% White

## Data analysis

- Multivariable regression models
- Interaction term for race and practice environment



# Variables, measures, and data sources

**Outcome:** Lipid screening

- Medicare claims

**Primary explanatory variable:** NP practice environment

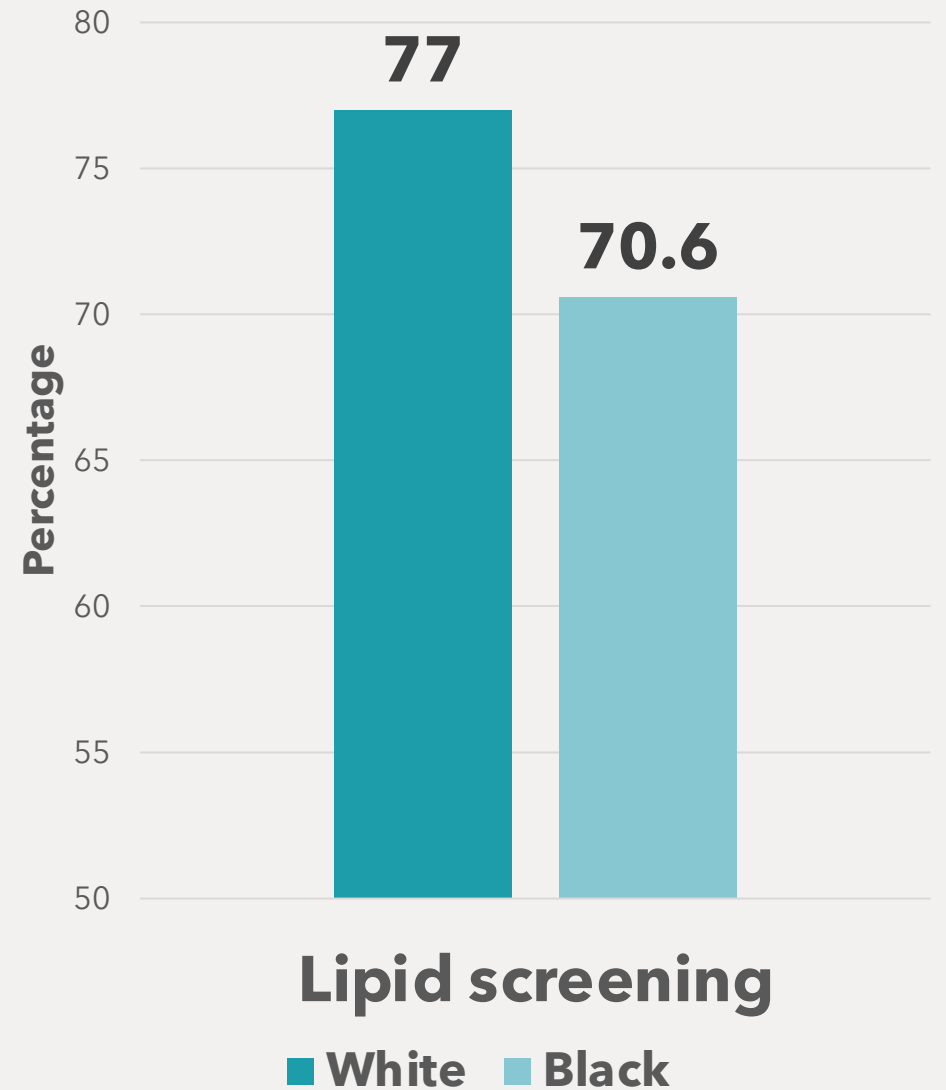
- NP-PCOCQ (NP survey)

**Confounding variables**

- Patient characteristics (Medicare claims)
- Practice characteristics (SK&A)

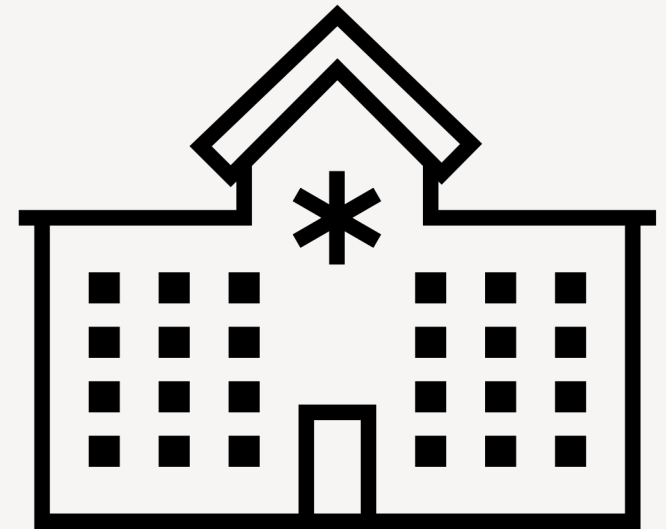
## Results - patients

- 111,911 CAD patients
  - 6% Black and 94% White
- Black CAD patients were...
  - Younger (70 vs. 76 years,  $p < .001$ )
  - Female (58% vs. 47%,  $p < .001$ )
  - Enrolled in Medicaid (46% vs. 11%,  $p < .001$ )
- Average of 6 chronic conditions



# Results - practices

- Practices where Black CAD patients received care...
  - Accepted Medicaid (73% vs. 59%,  $p < .001$ )
  - Smaller daily patient volume (166 vs. 193 patients/day,  $p < .001$ )
  - Less favorable practice environments (3.25 vs. 3.27,  $p < .001$ )

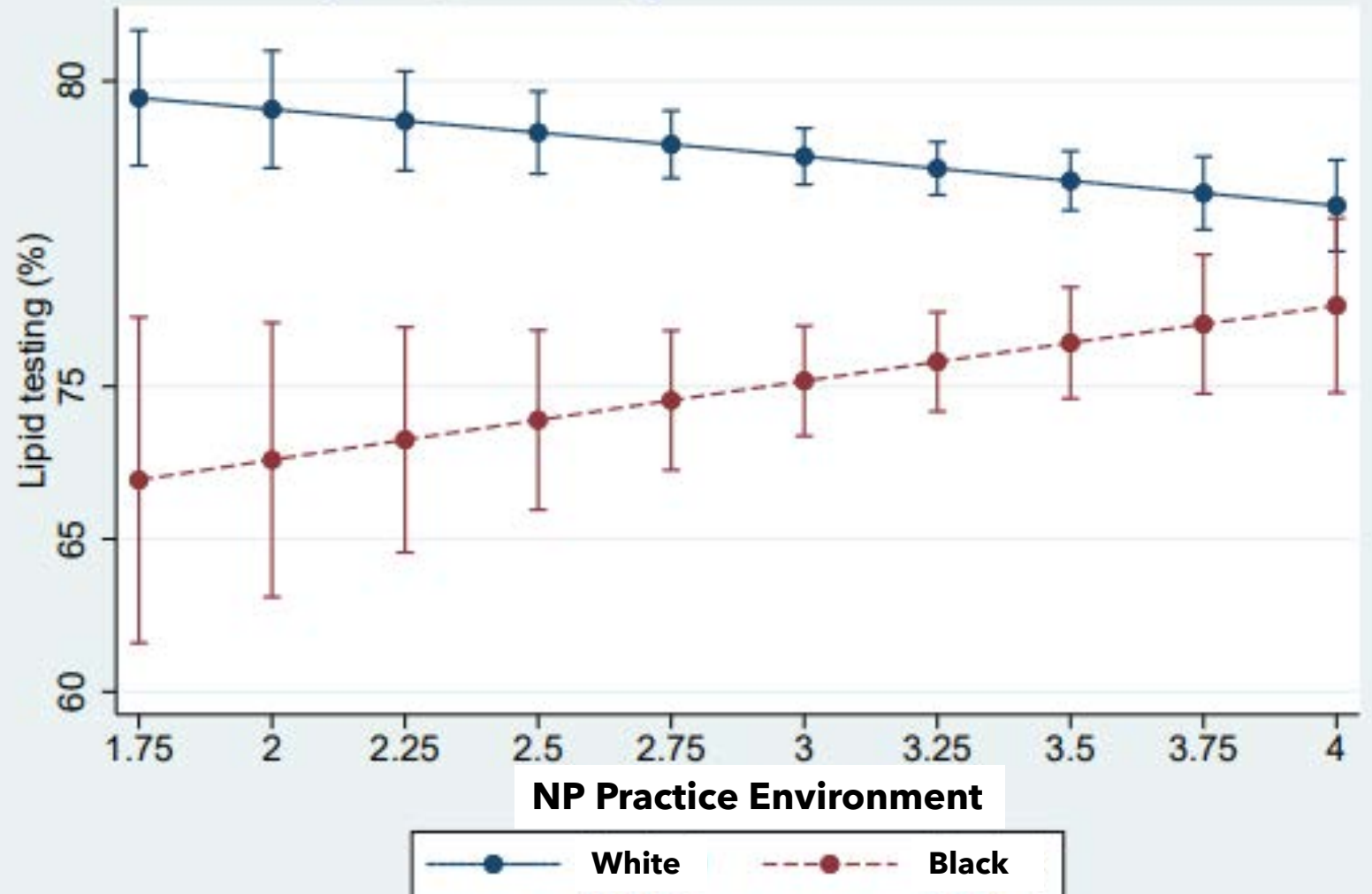


# Results

Odds of LDL screening 19% lower for Black vs. to White CAD patients

Significant interaction found between race and the practice environment

## Probability of Lipid Testing for Black and White CAD Patients



# Limitations



**CROSS-SECTIONAL  
STUDY DESIGN**



**LDL SCREENING FROM  
BILLING DATA**

## Conclusions

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The first study to examine the relationship between NP practice environments and health disparities.

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Disparities in CAD management between Black and White patients may be influenced by where they receive care.

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Investing in the NP practice environment, including supports for NP independent practice and strengthening NPs' relationships with physicians and administrators, may narrow these disparities.

# Thank you!

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