

Background

- Albuminuria testing is widely underused in persons at risk for CKD but crucial for optimal management
- Many patients with albuminuria may not be diagnosed due to lack of testing
- Goal: Estimate the prevalence of albuminuria that is detected and undetected due to lack of testing in a real world US cohort of patients at risk for CKD

Methods

Study Population

- **National Health and Nutrition Examination Survey (NHANES) 2007-2018:** nationally representative survey of non-institutionalized US residents
- **Optum 5PCT electronic health record (EHR) Database:** de-identified EHR data from health systems across US, divided into groups with UACR testing (Tested) and without (Untested)
- Included persons aged ≥ 18 years with hypertension, diabetes, or both

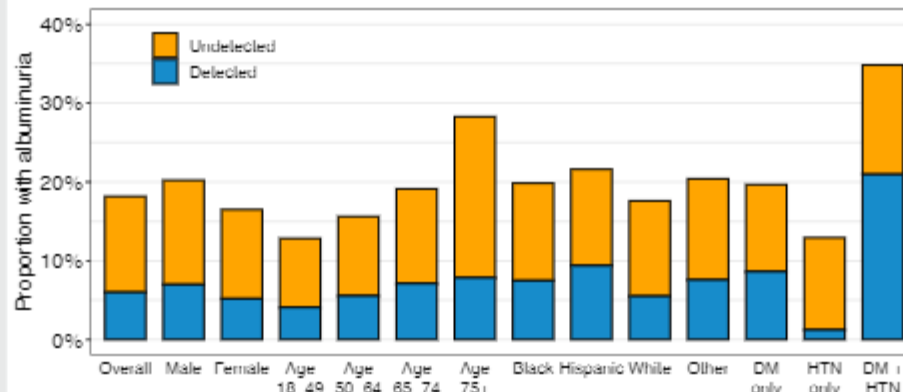
Statistical Analysis

- Using **NHANES**, we derived a logistic model to predict probability of UACR ≥ 30 mg/g
 - Predictors: age, sex, race/ethnicity, systolic BP, diabetes, heart failure, coronary artery disease, eGFR
- We then applied the prediction model to **Optum EHR** data and defined two subgroups with:
 - Detected albuminuria, reported UACR ≥ 30 mg/g
 - Undetected albuminuria, predicted UACR ≥ 30 mg/g among those without UACR testing available
- We examined the prevalence of UACR testing by predicted albuminuria probability

Results

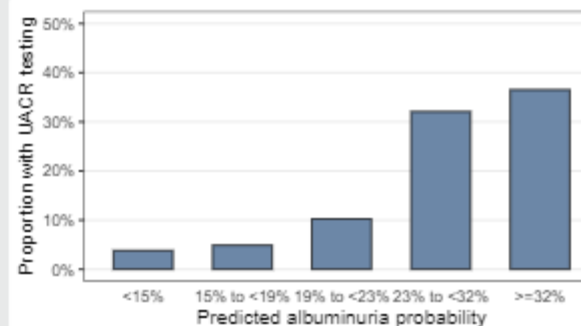
- NHANES: N = 13,410, logistic model estimating albuminuria risk
 - C statistic 0.73 in NHANES; 0.68 when applied in EHR subset with UACR testing
- EHR cohort: N = 192,108, mean age 60 (SD 15), 55% female, 26% with diabetes, 18% had albuminuria testing

Estimated Proportion of Patients with Albuminuria by Detection Status



- **6%** of the overall study population had UACR testing with demonstrated albuminuria
- **12%** of the overall study population had no UACR testing, but were predicted to have albuminuria
- Thus, the projected proportion of patients with albuminuria who were detected by testing was **33%**
- Albuminuria detection was lowest for patients with hypertension only, among whom only **10%** (1,742/18,293) with albuminuria were detected

Proportion of Patients with UACR Testing by Predicted Albuminuria Probability (EHR; N = 192,108)



- Patients with higher predicted albuminuria risk were more likely to receive UACR testing
- In the top quintile of predicted risk, only **37%** had completed albuminuria testing (14,033/38,421).

Conclusions

- An estimated 2/3 of patients with albuminuria are undetected due to lack of UACR testing
- There is marked albuminuria underdetection in patients with hypertension without diabetes
- Improving detection of albuminuria could substantially optimize care delivery for reducing CKD progression and cardiovascular risk

Limitations

- EHR data may be incomplete if patients receive care in multiple health systems
- Cross-sectional nature – albuminuria detection based on one UACR value