

*Hospital-Level Variation in  
Genetic Testing in Children's  
Hospitals' NICUs  
2016 to 2021*

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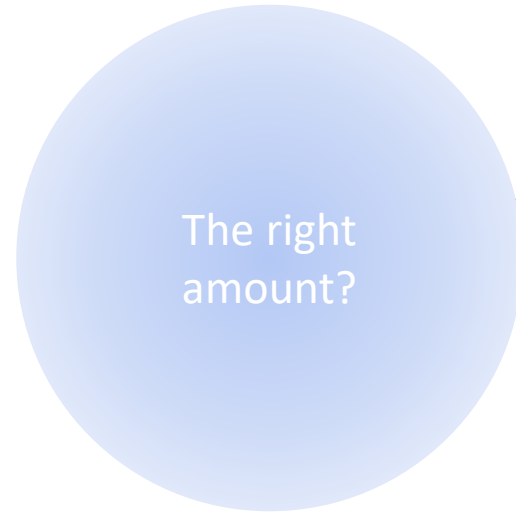


# Background

- How do neonatologists use genetic tests?
- How do neonatologists apply genetic information in making difficult decisions?
- **How does NICU genetic testing vary at the hospital-level?**



# Background



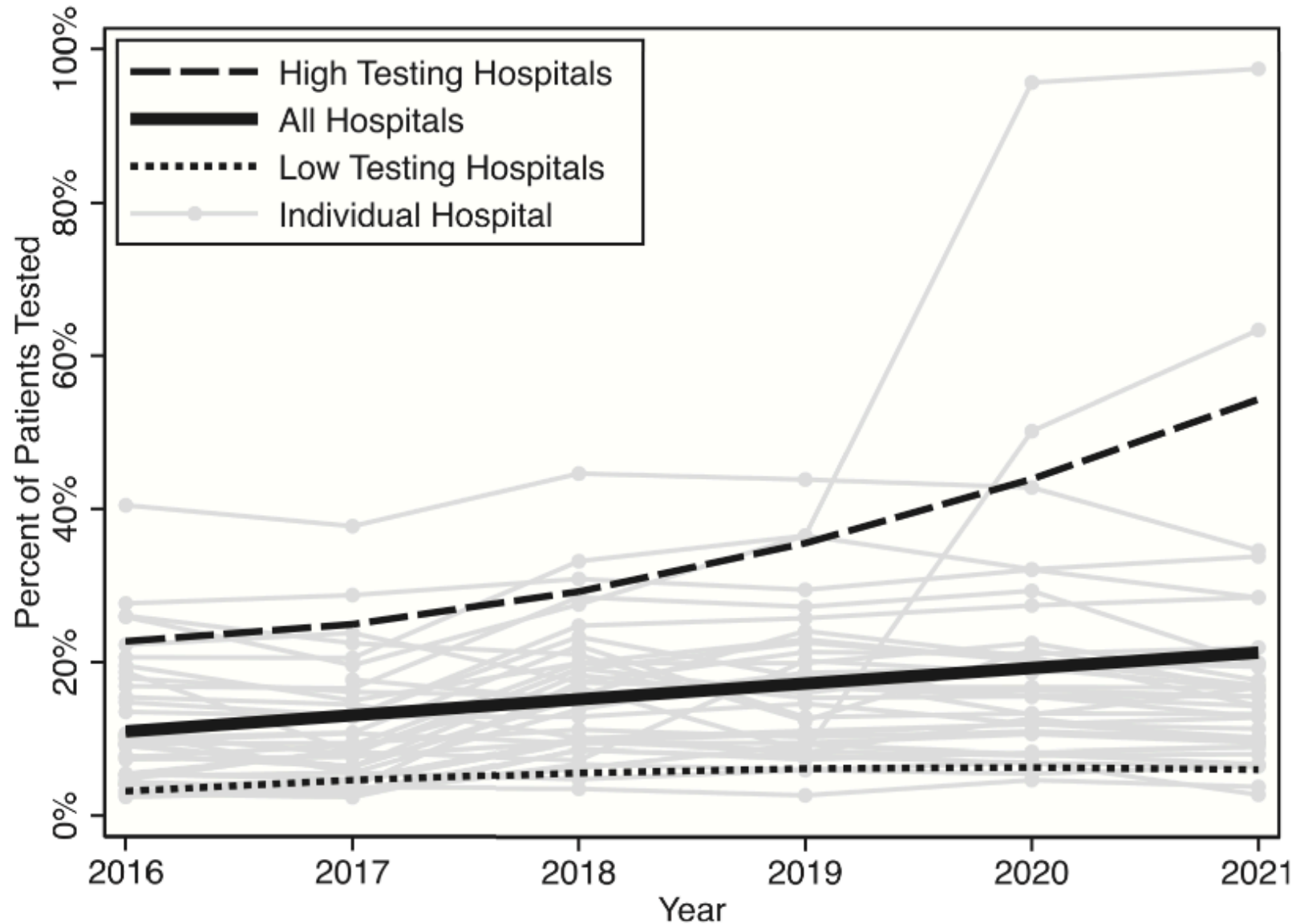
# Retrospective cohort study using PHIS

- 2016-2021
- Primary outcome: Percent of NICU patients with genetic testing
  - Secondary outcome: Number of tests per patient
- Impact of patient characteristics controlled using multivariable multilevel logistic regression

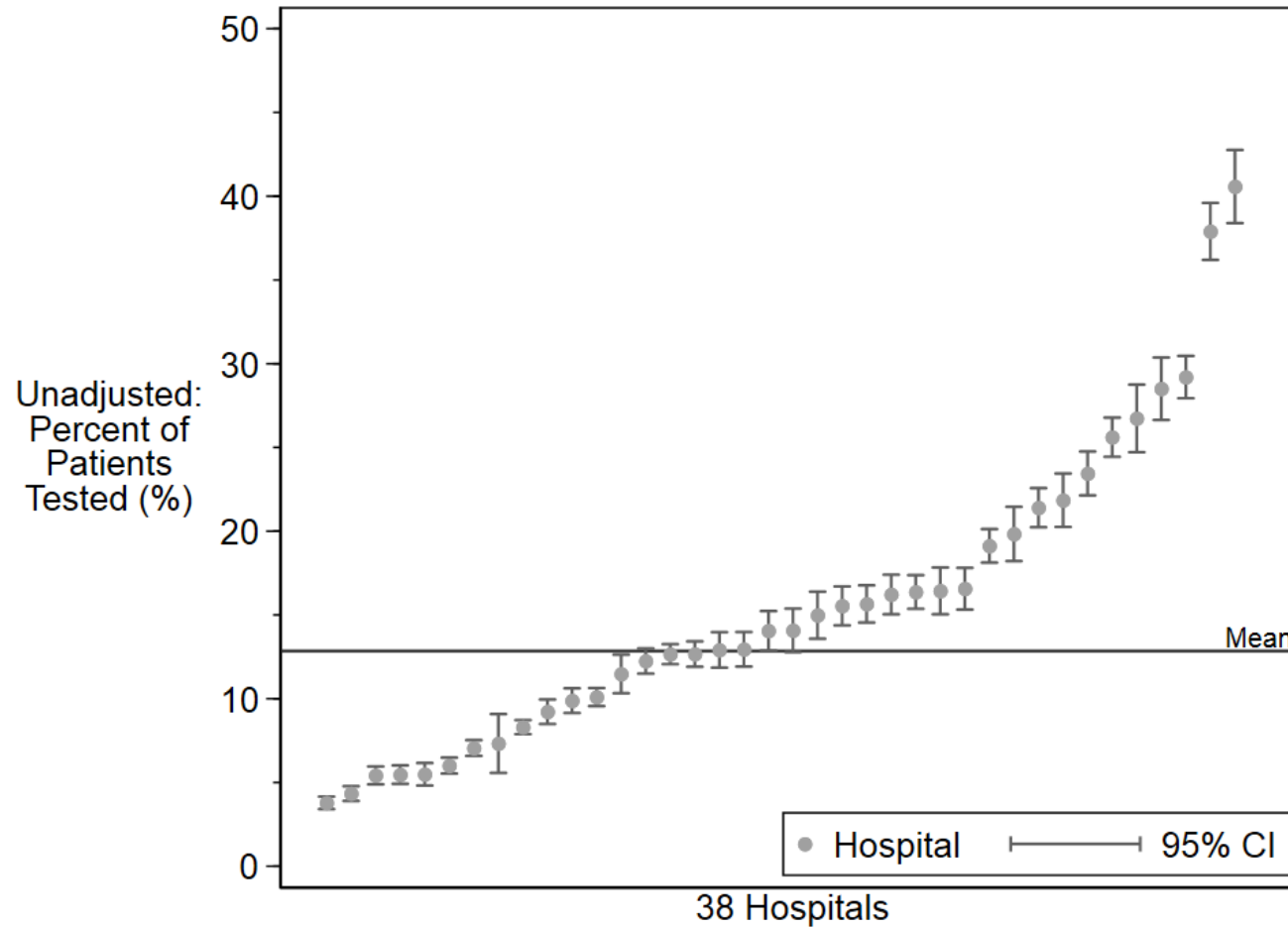
# Results

- 188,025 admissions from 38 hospitals
- 13% with some genetic testing overall

# Percent of patients who underwent genetic testing over time



# Genetic testing percentage by hospital



# Characteristics of patients who undergo testing



Mortality

Complex chronic  
conditions

Congenital  
anomalies

Severity level

Length of stay

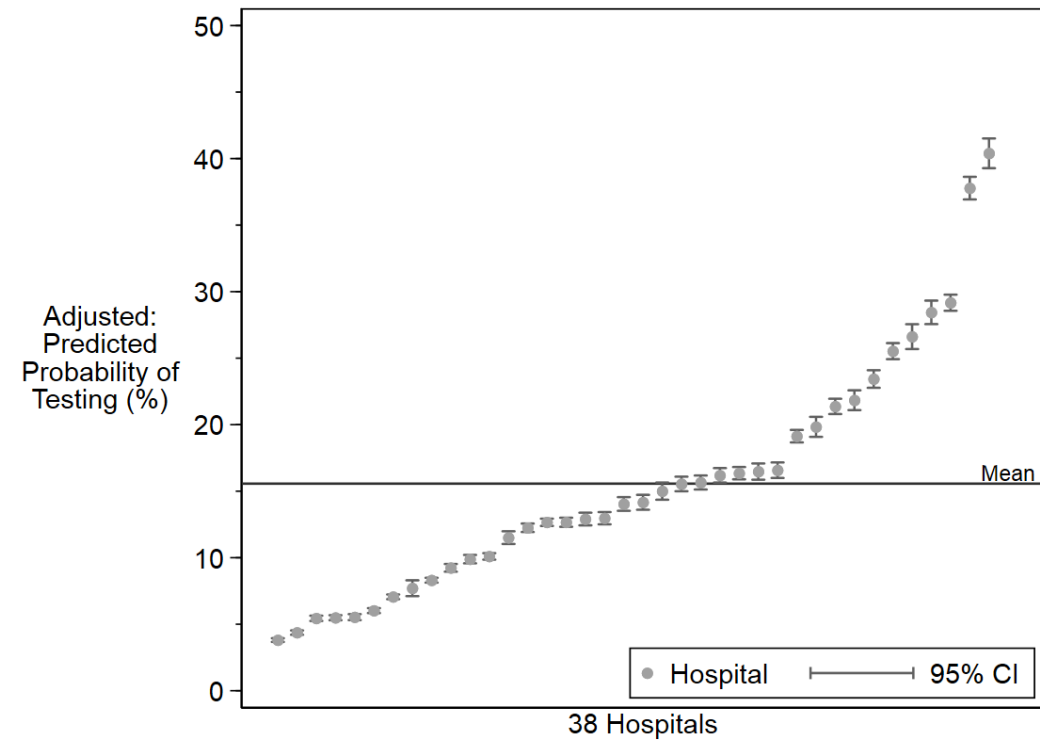
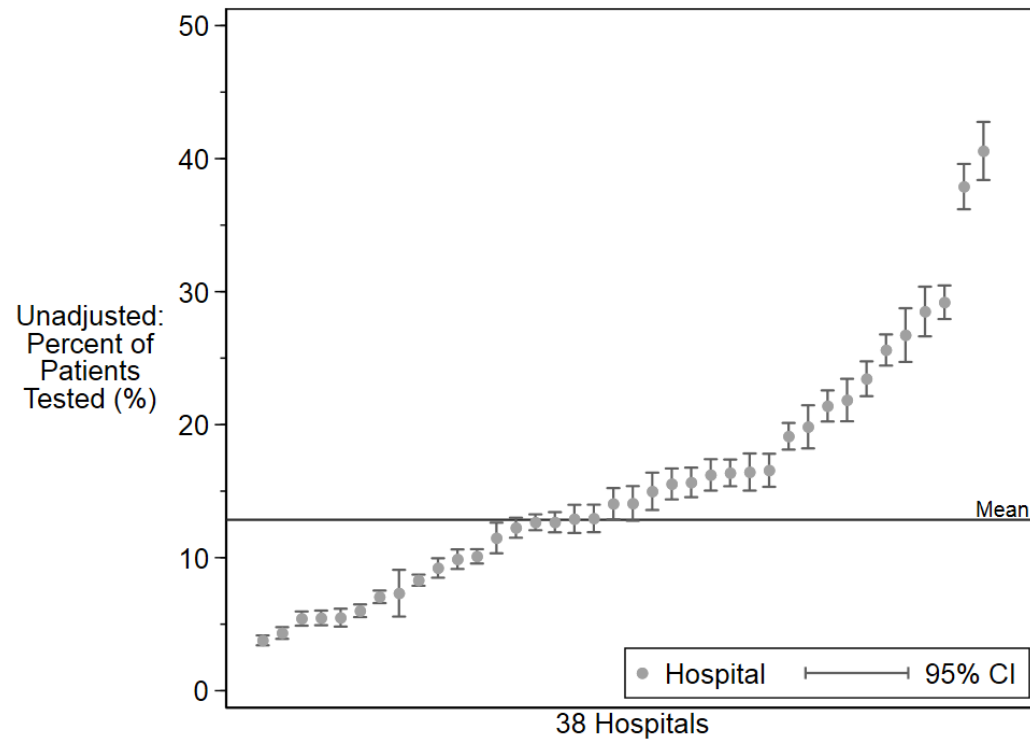


Gestational age

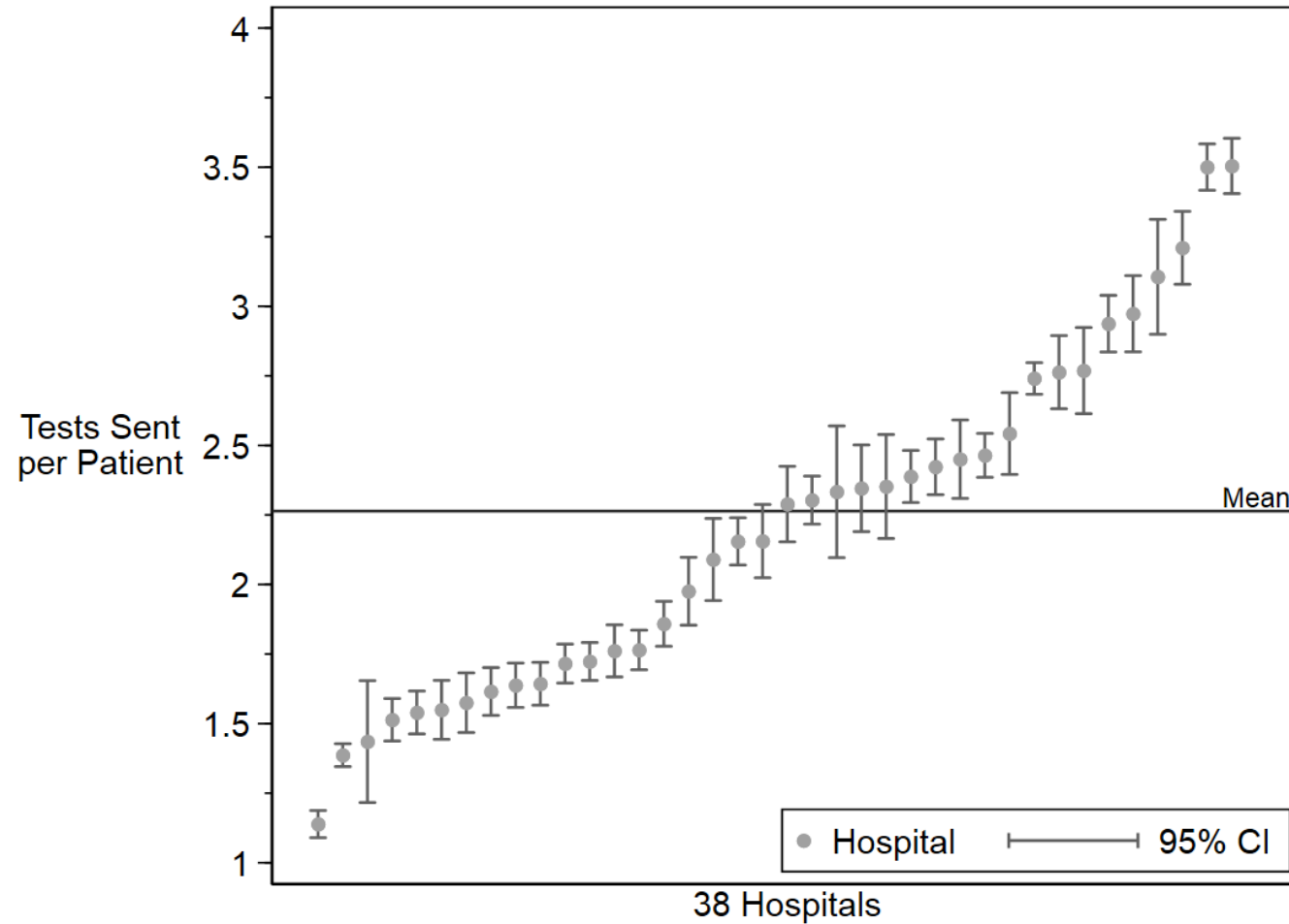
Likelihood of self-identifying as Black



# Unadjusted and adjusted genetic testing percentage by hospital



# Mean number of tests per patient



# Limitations

- Different coding practices
- Excludes research testing
- Was testing appropriate?


# Conclusions

- Percentage of NICU patients who undergo testing varies widely
  - Increasingly over time
- Not adequately explained by patient population differences
- Calls for clearer guidelines



## BRIEF REPORT

# Hospital-level variation in genetic testing in children's hospitals' neonatal intensive care units from 2016 to 2021

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# Thank You

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- John Flibotte

# Follow Up



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Extra slides



# Most Common Tests

- Microarray
- Tissue culture for chromosomal analysis
- Chromosome analysis
- Sanger sequencing
- FISH