

Reducing race-based disparities in inpatient access to subspecialty pulmonary care: A retrospective cohort study



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Background

- Health equity is an essential domain of healthcare quality
- Structural racism is associated with access to cardiology services and worse quality of patient care
- Patients with pulmonary diseases and specialized care needs may be subject to similar structural racism in specialty access

Objectives

- 1) Assess the association of race with admission to pulmonary vs general medicine services
- 2) Assess the association of race and admission to pulmonary service with patient-centered outcomes

Methods

- Retrospective cohort study of patients admitted with pulmonary diagnosis-related groups (DRGs) to pulmonary vs general medicine services at a quaternary academic hospital 4/2017-2/2020
- **Exposures**
 - 1) Race (Black vs white)
 - 2) Race, pulmonary service admission, interaction between race and pulmonary service admission
- **Outcomes**
 - 1) Pulmonary service admission
 - 2) Discharge destination, pulmonary clinic follow-up, hospital readmissions
- **Analysis**
 - 1) Logistic regression
 - 2) Logistic and multinomial regression
- **Covariates**
 - 1) Age, gender, language, year, quarter, DRG
 - 2) Same as Aim 1, plus insurance type, Elixhauser comorbidity index, predicted mortality, median income by zip code, established with health system outpatient pulmonary clinic, weekend admission, ICU stay



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Results & Root cause

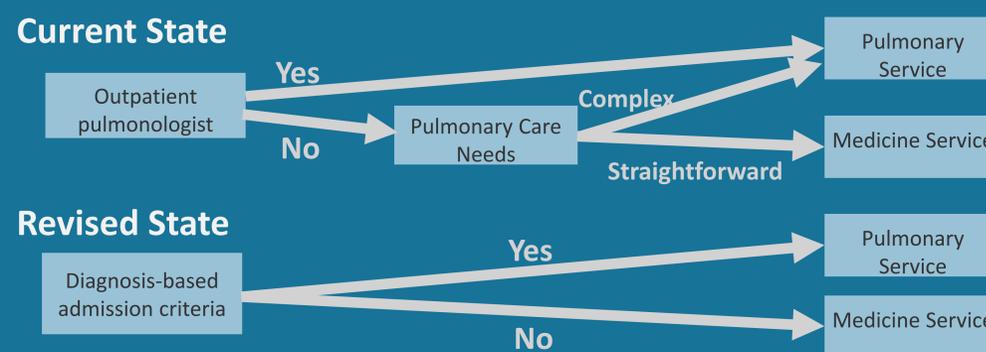
Black race was associated with a 65% decreased rate of pulmonary service admission.

A major driver of admission to pulmonary service was prior establishment with an affiliated outpatient pulmonologist, despite the absence of a policy to this effect for this specialty.

Table 1. Adjusted associations of race with pulmonary service admission

Variable	All patients		Patients without outpatient pulmonologist	
	RR (95% CI)	p-value	RR (95% CI)	p-value
Race				
White (reference)	---	---	---	---
Black	0.35 (0.29-0.42)	<0.001	0.57 (0.40-0.81)	0.002

Initiative: revise admission guidelines



Impact

Preliminary data demonstrate a 34% absolute increase and >300% relative increase in percentage of patients admitted to pulmonary service without an established with an outpatient pulmonologist.

Results

- 2,406 patients admitted with pulmonary DRGs
- 42% admitted to pulmonary service

Disparities in admissions and outcomes

- 34% Black patients admitted to pulmonary service vs 58% to general medicine services
- More pre-established outpatient pulmonologists for those admitted to pulmonary service (84% vs 0.8%)
- Black race associated with decreased rate of pulmonary service admission (RR 0.35, 95% CI 0.29-0.42, p<0.001)
- Pulmonary service admission associated with increased rates of 1- and 3-month pulmonary clinic follow-up

Root cause analysis

- Prior establishment with an affiliated pulmonologist was a major driver of admission to the pulmonary service, despite the absence of a policy to this effect

Intervention

- Implemented changes to admitting policy documents, including clarification of criteria for pulmonary service admission
- Preliminary data demonstrate a 34% absolute increase and >300% relative increase in percentage of patients admitted to pulmonary service without an established with an outpatient pulmonologist

Discussion

- Black race associated with decreased likelihood of pulmonary service admission, despite associations with improved clinical outcomes
- Inequitable access to outpatient pulmonary care may be propagated, therefore creating hospitalization inequities
- Future work needed to understand root cause of disparities to promote health equity, re-evaluate these analyses after intervention implementation, and evaluate disparities among other service lines and across hospitals and health systems

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