Association of Language and Neighborhood Opportunity with Pediatric Day-of-Surgery Cancellation

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Introduction

- ❑ Day-of-surgery cancellations (DOSC) are BIG problem for patients and hospitals
- ❑ Patients living in disadvantaged neighborhoods face increased risk of DOSC
- ❑ Non-English primary language (NEPL) is a risk for healthcare access challenges

Objective: To determine the association between primary language and pediatric DOSC, and to what degree the association is modified by neighborhood opportunity.

Methods

- ❑ Patients <18 yr scheduled for ambulatory surgery at our hospital, 2017-2022
- ❑ Neighborhood opportunity determined by Childhood Opportunity Index (COI) 2.0
- ❑ Exposures: 1) Neighborhood opportunity, determined by Childhood Opportunity Index (COI 2.0), 2) Primary household language (NEPL or EPL)
  - Disadvantaged neighborhood: Very low, low, and moderate opportunity
  - Advantaged neighborhood: High and very high opportunity
- ❑ Outcome: DOSC
- ❑ Determined additive interaction between NEPL status and neighborhood opportunity using relative excess risk due to interaction (RERI)

Results

- ❑ 173,533 children scheduled for ambulatory procedures
- ❑ DOSC=3.74% in EPL; DOSC=5.24% in NEPL
- ❑ 71.2% of NEPL patients lived in disadvantaged neighborhoods
- ❑ EPL patients from disadvantaged and advantaged neighborhoods had lower odds DOSC
- ❑ Interaction between NEPL and neighborhood advantage not statistically significant on additive scale, indicating no evidence of a protective benefit against DOSC for NEPL patients living in advantaged neighborhoods (RERI: -0.06; 95%CI -0.21-0.08; p=0.40)

Discussion

- ❑ As neighborhood opportunity does not appear to be protective, language of care may be an easily modifiable variable to reduce DOSC and potential health disparities

Figure 1. **Distribution of opportunity in study population**

Non-English primary language correlates with day-of-surgery cancellation, despite neighborhood advantage.

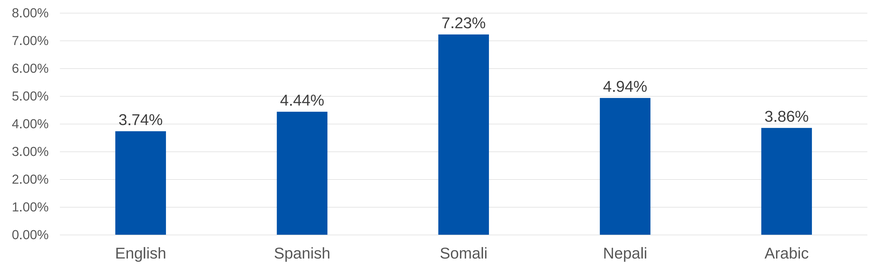

Figure 2. **Prevalence of day-of-surgery cancellation, by primary language**

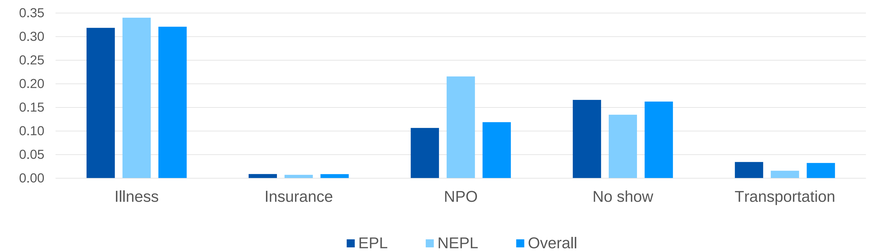

Figure 3. **Reason for cancellation, by language status**

Language	Disadvantaged Neighborhoods		Advantaged Neighborhoods		Additive Interaction of Neighborhood Opportunity and Language	
	OR(95%CI)	P-value	OR(95%CI)	P-value	RERI(95%CI)	P-value
NEPL	Reference		Reference		Reference	
EPL	0.77(0.71,0.85)	<0.001	0.62(0.52,0.72)	<0.001	-0.06(-0.21,0.08)	0.4

Figure 4. **Effect of language status on DOSC, stratified by neighborhood COI**

References
Noelke C MN, et al. Childhood Opportunity Index 2.0 technical documentation. 2020. https://www.diversitydatakids.org
Pratap JN, et al. *Pediatrics* 2015; 135(5): e1292-9.