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Does Access to Care Influence a Child's Presentation with Appendicitis?

Neal Talukdar

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Research Abstract Title

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Medical Student (I will have just graduated a week prior)

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IRB Number: 17090536

Describe role of Submitting/Presenting Trainee in this project (limit 150 words):

As the medical student involved with this study, I was primarily responsible for collecting data on RedCap. I, furthermore, assisted with data analysis for the appendicitis study.

Background, Objectives/Goal, Methods/Design, Results, Conclusions limited to 500 words

Background + Objectives/Goal:

Racial demographic and health care coverage impact how and when patients seek care. Previous studies have documented that minority children present with higher rates of perforated appendicitis. We aimed to identify if racial and coverage disparities were associated with the timing and mechanism of appendicitis presentation.

Methods/Design:

We performed a prospective study of children (≤ 18 years old) who underwent laparoscopic appendectomy from May 2018 - September 2020. Prior to discharge, the patient's parent/guardian completed a survey focused on health care encounters within the past year. Surveys were collected using RedCap®; data were analyzed using STATA®.

Results:

In total, 178 patients completed the questionnaire. The median age at appendectomy was 11 years (IQR 8, 14); 67.4% were Caucasian, 14.0% Hispanic, 9.0% African American (AA), and 5.1% identified as multiracial. More Hispanics presented with perforated appendicitis (68% vs 22-27.5% for other groups, $p=0.02$). We then performed a sub-analysis of survey data from patients with perforated appendicitis ($n=68$) to identify factors associated with this difference.

A far greater percentage of AA, Hispanic, and multiracial patients had Medicaid insurance ($p<0.001$). All minority ethnicities were more likely to have been previously seen in the emergency

room (ER) for their current symptoms prior to diagnosis than Caucasians ($p=0.01$, Table 1). More AAs and Hispanics also utilized the ER 2+ times in the past year ($p=0.01$); however, there was no difference among groups in the ability to find a child provider ($p=0.66$) or being able to afford a child's medications ($p=0.99$).

Conclusions:

A greater percentage of Hispanic and AA patients utilized the ER multiple times in the year before being diagnosed with appendicitis, including been seen in the ER more than once for their appendicitis symptoms. Further studies are needed to help mitigate these missed opportunities and improve efficient health care utilization.

Table 1: Demographics and Access to Health Care Survey Questions. These questions were part of the RedCap® surveys parents/guardians of patients who were treated for appendicitis completed prior to hospital discharge. Responses are given only for patients who presented with perforated appendicitis. (ER = emergency room; continuous variables are listed in medians (IQR))

	Caucasian (n=40)	Black (n=6)	Hispanic (n=17)	Multiracial (n=2)	Other+ (n=3)	p-value
Age	12 (9.5, 14.5)	11.5 (10, 14)	9 (6.5, 11)	5 (3, 7)	7 (2, 8)	0.004
	Insurance Status					
-Private	27 (67.5%)	2 (33.3%)	1 (5.9%)	0 (0%)	2 (66.7%)	<0.001
-Medicaid	9 (33.3%)	4 (66.7%)	16 (94.1%)	2 (100%)	1 (33.3%)	
-No Insurance	4 (10.0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
Seen Previously in ER for Current Symptoms	11 (27.5%)	3 (50.0%)	11 (64.7%)	1 (50.0%)	3 (100%)	0.01
	Where Does Your Child Go When For an Illness?					
-Clinic/ Health Center	12 (30.0%)	1 (16.7%)	3 (17.7%)	1 (50.0%)	0 (0%)	0.62
-Doctor's Office	33 (82.5%)	3 (50.0%)	8 (47.0%)	0 (0%)	3 (100%)	0.004
-Adult ER	2 (50.0%)	0 (0%)	0 (0%)	1 (50%)	0 (0%)	0.17
-Children's ER	2 (5.0%)	3 (50.0%)	8 (47.1%)	1 (50.0%)	0 (0%)	<0.001
-Urgent Care	12 (30%)	2 (33.3%)	4 (23.5%)	0 (0%)	0 (0%)	0.89
	Where Does Your Child Go for Routine/ Preventative Care?*					
-Clinic/ Health Center	1 (2.5%)	2 (33.3%)	6 (35.3%)	1 (50.0%)	0 (0%)	0.002
-Doctor's Office	37 (92.5%)	5 (83.3%)	9 (52.9%)	1 (50.0%)	3 (100%)	0.005
-Children's ER	0 (0%)	0 (0%)	2 (11.8%)	0 (0%)	0 (0%)	0.25
-Urgent Care	1 (2.5%)	0 (0%)	0 (0%)	1 (50.0%)	0 (0%)	0.10
Have Trouble Finding a Provider*	1 (2.5%)	0 (0%)	1 (5.8%)	0 (0%)	0 (0%)	0.66

Experienced Delay in Care for Child*	1 (2.5%)	0 (0%)	0 (0%)	1 (11.1%)	0 (0%)	0.99
	Number of Child ER Visits*					
-None	24 (60.0%)	3 (50.0%)	5 (29.4%)	0 (0%)	2 (66.7%)	0.11
-Once	15 (37.5%)	2 (33.3%)	6 (35.3%)	2 (100%)	1 (33.3%)	0.57
-2+ Times	1 (2.5%)	1 (16.7%)	6 (35.3%)	0 (0%)	0 (0%)	0.01