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Relationship between Rurality and Access to Care for Families of Hospitalized Children

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Relationship Between Rurality and Access to Care for Families of Hospitalized Children

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Children's Mercy Research Days
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Disclosures

There are no applicable disclosures for this presentation.

Outline

- Introduction: Background Information and Study Aims
- Research Methods
- Data and Findings
- Conclusions and Clinical Application
- Future Research Directions

Introduction

- Many aspects to this project and topic
- Consider your clinical experience...
- At Children's Mercy Hospital:
 - Greater than 1 in 5 children hospitalized are of rural background (~70% having travelled > 60 miles for hospitalization)

Background

- In rural communities:
 - Higher rates of poverty for rural children
 - Parents report children less likely to report engagement with primary care
 - Rural children more likely to die
- Baseline hardships may be significantly exacerbated during hospitalization: daily cost burden compared to daily household income
- Significant levels of stress noted in families of hospitalized patients
- What works so far?

Aim

- To describe differences in demographic, health care access, sources of stress, and clinical outcomes for rural children compared to their non-rural counterparts in the setting of inpatient hospitalization

Hypothesis

- Stress, lack of social support, and financial burdens of hospitalization will be positively associated with distance of patient's home to the hospital.

Research Methods

- Cross-sectional single site study enrolling caregivers of hospitalized children between 8/31/2021 and 12/2/2022
- 170 caregivers enrolled with rurality defined as < 60 miles from children's hospital
- Data collection: survey (available in English and Spanish); clinical data extracted from Pediatric Health Information Systems
 - Demographic information
 - Access to care
 - Transportation methods
 - Support systems and coping with stress
 - Free text comments
- Analysis: bivariate chi-squared analyses (quantitative), dual researcher coding/theme development (qualitative)

Demographic Characteristics

- No differences demonstrated regarding ethnicity, education level, or employment level

	Overall	Non-Rural	Rural	p-value
N	170	89 (52.4)	81 (47.7)	
Age, Median (IQR)	33 [28, 39]	33 [30, 38]	33 [27, 41]	0.715
Sex, N (%)				
Female	121 (71.2)	62 (69.7)	59 (72.8)	0.648
Male	49 (28.8)	27 (30.3)	22 (27.2)	
Non-Binary				
Race, N (%)				
American Indian/Alaskan Native	1 (0.6)	0 (0)	1 (1.2)	0.027
Asian	1 (0.6)	1 (1.1)	0 (0)	
Native Hawaiian/Pacific Islander	1 (0.6)	1 (1.1)	0 (0)	
Black	15 (8.8)	13 (14.6)	2 (2.5)	
White	128 (75.3)	63 (70.8)	65 (80.2)	
More than One Race	11 (6.5)	3 (3.4)	8 (9.9)	
Prefer Not to Answer	12 (7.1)	8 (9)	4 (4.9)	
Family Income, N (%)				
\$25,000 or less	35 (20.6)	14 (15.7)	21 (25.9)	0.031
\$25,001 - \$50,000	41 (24.1)	16 (18)	25 (30.9)	
\$50,001 - \$100,000	52 (30.6)	29 (32.6)	23 (28.4)	
\$100,001 - \$150,000	27 (15.9)	18 (20.2)	9 (11.1)	
\$150,001 or greater	13 (7.6)	10 (11.2)	3 (3.7)	

Access to Care and Transport Modalities

	Overall	Non-Rural	Rural	p-value
Concerns with Access to High Quality Healthcare, N (%)				
No	121 (71.2)	77 (86.5)	44 (54.3)	<.001
Yes	49 (28.8)	12 (13.5)	37 (45.7)	
Able to be Hospitalized Closer to Home, N (%)				
No	123 (72.8)	56 (62.9)	67 (83.8)	0.002
Yes	46 (27.2)	33 (37.1)	13 (16.3)	
Healthcare Needs Met in Community, N (%)				
No	89 (52.4)	34 (38.2)	55 (67.9)	<.001
Yes	81 (47.6)	55 (61.8)	26 (32.1)	
Distance to PCP, Median miles (IQR)				
	10 [5, 25]	10 [5, 16]	15 [5, 30]	0.010
Distance to ED, Median miles (IQR)				
	10 [5, 15]	10 [5, 15]	10 [5, 18]	0.901
Distance to Hospital, Median miles (IQR)				
	10 [5, 30]	10 [5, 20]	15 [5, 40]	0.034
Distance to CM-KC, Median miles (IQR)				
	50 [20, 120]	20 [11, 30]	125 [100, 175]	<.001
Child Transport, N (%)				
Ambulance	55 (32.4)	29 (32.6)	26 (32.1)	<.001
Air (Plane or Helicopter)	23 (13.5)	1 (1.1)	22 (27.2)	
Own Vehicle	83 (48.8)	54 (60.7)	29 (35.8)	
Ride from Friend/Family	6 (3.5)	3 (3.4)	3 (3.7)	
Public Transportation	2 (1.2)	1 (1.1)	1 (1.2)	
Other	1 (0.6)	1 (1.1)	0 (0)	

Clinical Characteristics

	Overall	Non-Rural	Rural	p-value
N	170	89 (52.4)	81 (47.7)	
LOS (days), Median (IQR)	5 [3, 8]	6 [4, 10]	4 [2, 6]	0.001
H-RISK, Mean (StdDev)	2.13 (2.25)	2.15 (2.17)	2.1 (2.34)	0.393
ICU admission, N (%)	19 (11.2)	10 (11.2)	9 (11.1)	0.654
Overall Costs (\$), Median (IQR)	17733 [10544, 32218]	21029 [15388, 33523]	14779 [7944, 29535]	0.010

Non-Rural			
Rank	Diagnosis	N	%
1	Acute bronchiolitis	9	10.47
2	Malnutrition	9	10.47
3	Pneumonia	7	8.14
4	Respiratory failure; insufficiency; arrest	7	8.14
5	Cellulitis	3	3.49
6	Infective arthritis and osteomyelitis	3	3.49
7	Septicemia	3	3.49
8	Urinary tract infections	3	3.49
9	Asthma	2	2.33
10	Congenital laryngomalacia	2	2.33

Rural			
Rank	Diagnosis	N	%
1	Acute bronchiolitis	7	8.75
2	Malnutrition	6	7.50
3	Asthma	4	5.00
4	Diabetic ketoacidosis	4	5.00
5	Medical examination/evaluation	3	3.75
6	Meningitis	3	3.75
7	Orbital cellulitis	3	3.75
8	Suicide and intentional self-inflicted injury	3	3.75
9	Fever of unknown origin	2	2.50
10	Foreign body in alimentary tract	2	2.50

Reported Stressors

Medical Team

“The doctors, nurses and all staff are extremely helpful, patient and kind”

Support

“Being with friends and family”

Medical Diagnosis/Illness

“Seeing him fight and come out of it”

Medical Diagnosis/Illness

“I don’t know why my child is sick and is not improving”

Family Needs

“We are away from our other kids and four hours from home”

Financial Insecurity

“The expenses of being out of town”

Medical Diagnosis/Illness

“Not knowing day to day if he’s going to get better”

Family Needs

“How will my son get to school while I’m here”

Financial Insecurity

“Having to spend more money on gas and food than I’m used to”

Conclusions

- Rurality as it relates to healthcare access; may predispose hospitalizations
- Larger burden and stress exposure due to:
 - Transportation methods
 - Lack of financial/social supports
 - Disproportionate incomes
- Need for further interventions

Future Directions

- Are children with medical complexity affected in more drastic ways?
- Individualized and targeted interventions aimed at reducing caregiver stress and burdens when accessing acute care needs

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