Low-intensity social care reduces child emergency care and hospital utilization: a randomized trial

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Disclosure

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- I have no conflicts of interest to disclose.

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Food Insecurity and Caregivers of Hospitalized Children

- Food Insecurity (FI) is associated with higher healthcare utilization and poorer child health
- Health-related social risk factors (HRSRs), including food insecurity (FI), increase vulnerability to costs and challenges of caregiving[1,2]
- Hospitalization itself can trigger FI[3]

1. Center on Budget and Policy Priorities, 2022; 2. Cook et al., *Adv Nutr*, 2013; 3. Makelarski et al., *Am J Public Health*, 2015; 4. Peltz et al., *Pediatrics*, 2019.

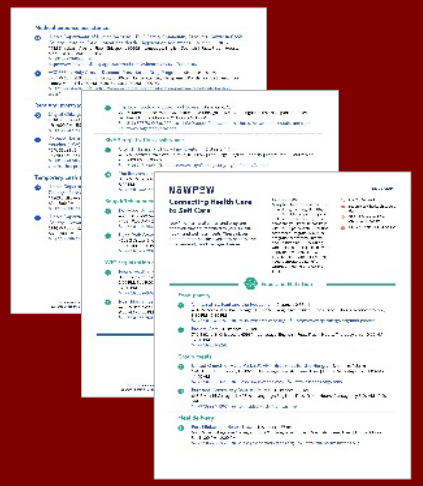
CommunityRx

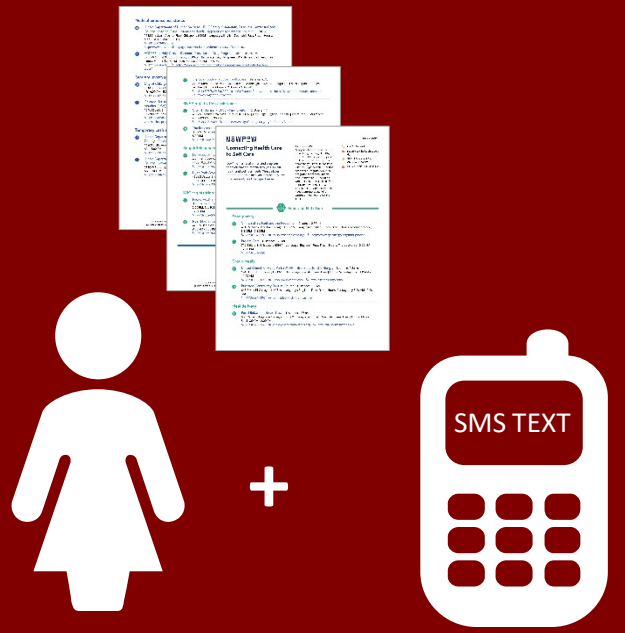
- Low intensity, high scale, evidence-based intervention[5,6]
- Developed and iterated over 15 years using an asset-based, community-engaged approach in multiple communities[7-12]
- Since 2012, more than 114 thousand people have participated in CommunityRx intervention studies
  - Millions have received community resource referrals via CommunityRx-informed technology platforms[7-12]

5. Grey et al., *Nurs Outlook, 2015*; 6. Herman et al., *Res Soc Work and Prac*, 2010; 7. Abramsohn et al., *Trials*, 2023; 8. Lindau et al., *Am J Public Health,2019; 9*. Lindau et al., *JASIST*, 2022; 10. Lindau et al., *Am J Public Health*, 2016; 11. Glasser et al., *JAMA Pediatr,* 2023; 12. Lindau et al., *Health Affairs*, 2016.

Evidence-based components (EBCs) of the CommunityRx-Hunger[13] Intervention

"Many families with children find it hard to get enough healthy food. A child's hospital stay can make it even harder."





EDUCATION
Discuss the common issue of food insecurity and other health-related social risks, especially among families with ill children; resources can help.

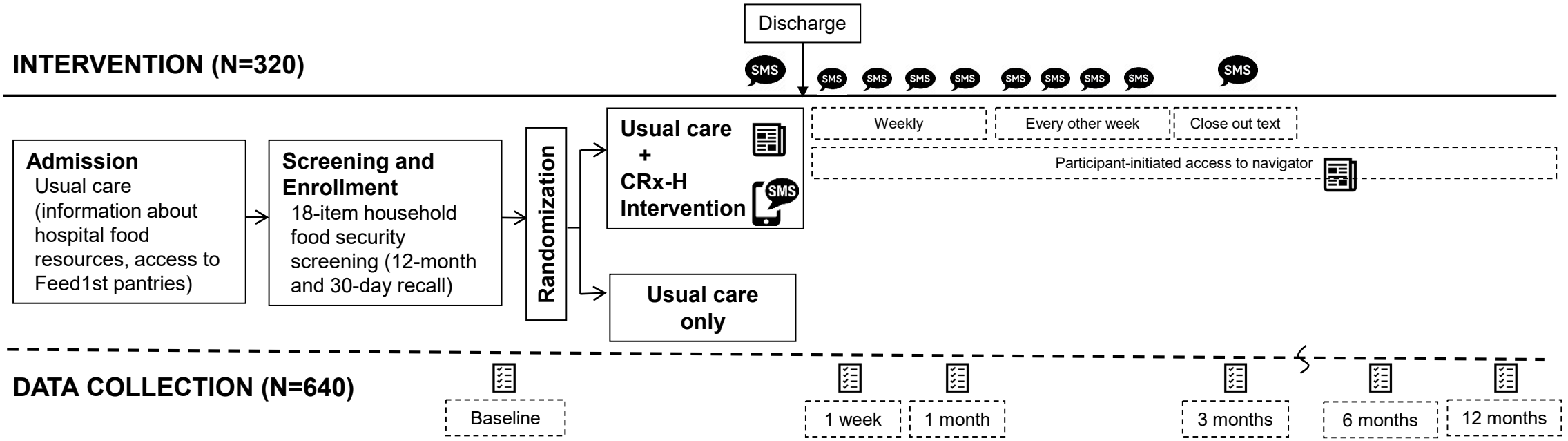
ACTIVATION
Deliver HealtheRx with coaching Ongoing access to Community Resource Navigator via text, email and phone

BOOSTING
Deliver copy of HealtheRx
Proactive text message support based on Critical Time Intervention Theory[14]

Within 48-72 hours of study enrollment → Upon discharge

[13]Lindau ST. CommunityRx for Hunger [NIH RePORTER]. NIH RePORTER, https://reporter.nih.gov/project-details/10079401 (2019). [14]Herman DB, Mandiberg JM. Critical time intervention: Model description and implications for the significance of timing in social work interventions. *Research on Social Work Practice* 2010;20:502–8. https://doi.org/10.1177/1049731509360667.

Evidence-based Components of CommunityRx-Hunger



Legend:

Survey data point

SMS Automated intervention text message

Navigator-delivered HealtheRx, including as requested by participants in the 12 months following initial delivery

Hypothesis

- Caregivers of hospitalized children who receive the CommunityRx-Hunger intervention will:
  - have fewer child emergency care visits and hospitalizations over 12 months compared to those who receive usual care
  - report better child health over 12 months versus baseline

- Usual care could include *ad hoc* social care (e.g., a nurse telling a caregiver about a food pantry)

Methods

- DESIGN: Double-blind Randomized Control Trial (RCT)[6]
  - University of Chicago IRB-approved protocol
  - NCT04171999
- PARTICIPANTS: (n=320 intervention, n=320 controls) English or Spanish speaking primary caregivers of a child younger than 18 years old hospitalized in general, intensive care, or transplant units (expected hospitalization >24 hours and <30 days) living in one of 42 ZIP codes in the medical center's primary service area with comprehensive resource data + willing to receive text messages
- SETTING: Urban academic medical center in predominantly African American/Black geography
- TIME PERIOD: Enrollment unexpectedly contemporaneous with COVID19 pandemic (Nov 2020 – Aug 2023)

6. Abramsohn et al.,2023, Trials

Outcomes

- Self-reported number of child emergency department (ED) visits and hospitalizations at baseline and 12 months
  - Reliable versus claims data (92% for ED and 93% for hospitalization)[15]
- Caregiver-reported child health at baseline, 1 week, 1 month, 3 months, and 12 months

15. Short et al.,2009, J Occup Environ Med

Statistical Analysis

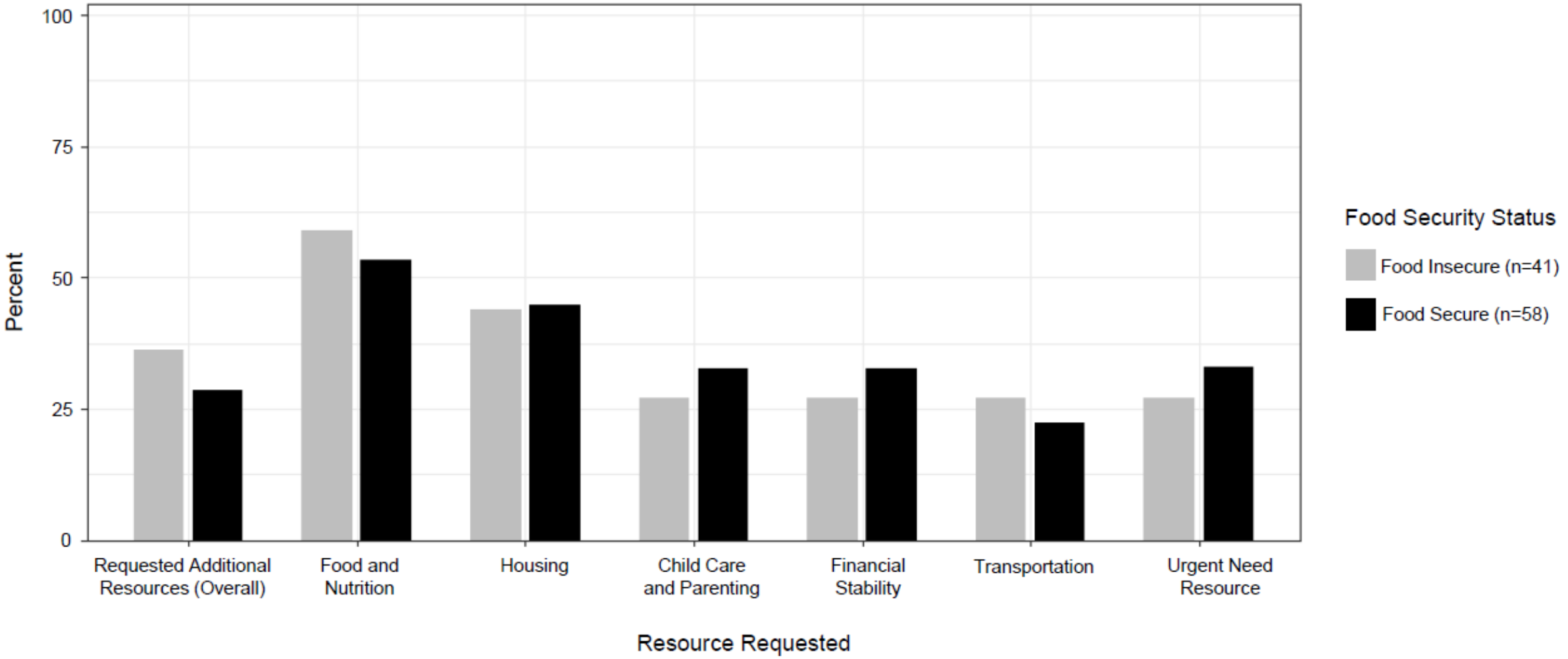
- Pre-planned analyses focused on food insecure (FI) subgroup outcomes (n=223)
- Regression models were fit with treatment group (intervention vs. control) and outcomes at baseline, and with other covaraites, as predictors
- Odds ratios (OR) and incidence rate ratios (IRR) and corresponding 95% CIs were calculated using logistic and negative binomial models, respectively
- Multiple imputation models were run to assess the impact of missing data
- Sensitivity analyses included excluding children hospitalized in NICU and examining the subgroups who requested and did not request an additional HealtheRx

Sociodemographic & Health Characteristics, FI (N=223)

Caregiver Age (yrs)	
Mean (SD)	36 (9)
Gender	
Female	212 (95%)
Male	10 (5%)
Child Age (yrs)	
Median (IQR)	7 (11)
Length of Hospital Stay (days)	
Median (IQR)	3 (3)
Caregiver Race	
Black/African American	180 (81%)
White	15 (7%)
Other	27 (12%)
Caregiver Ethnicity	
Hispanic	33 (15%)
Relationship to Child	
Parent	212 (95%)

Children in Household	
0-1	69 (31%)
2 or more	154 (59%)
Income	
<$25,000	108 (50%)
≥$25,000	110 (50%)
Education	
Less than college graduate	187 (84%)
College graduate	36 (16%)
Insurance Status	
Medicaid/Medicare	180 (81%)
Private	30 (14%)
Other/None	12 (6%)
Child Health	
Fair or Poor	77 (35%)
Good, very good or excellent	145 (65%)
Partnership Status	
Single	112 (51%)
Partnered	110 (49%)

Types of additional resources requested by participants



Acute Care Utilization over 12 months

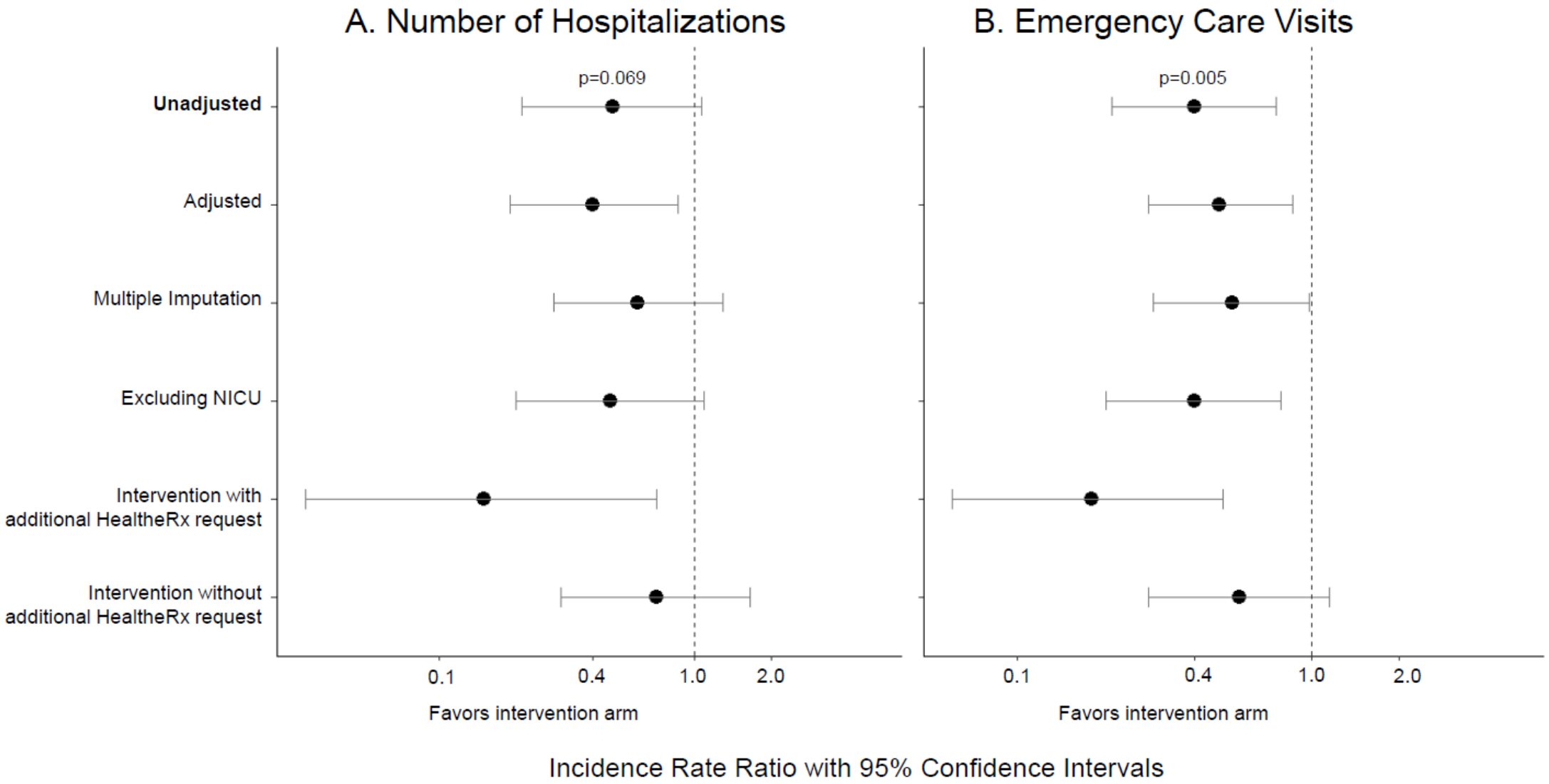
≥ 1 ED Visit

intervention group **30%** vs. controls **52%**

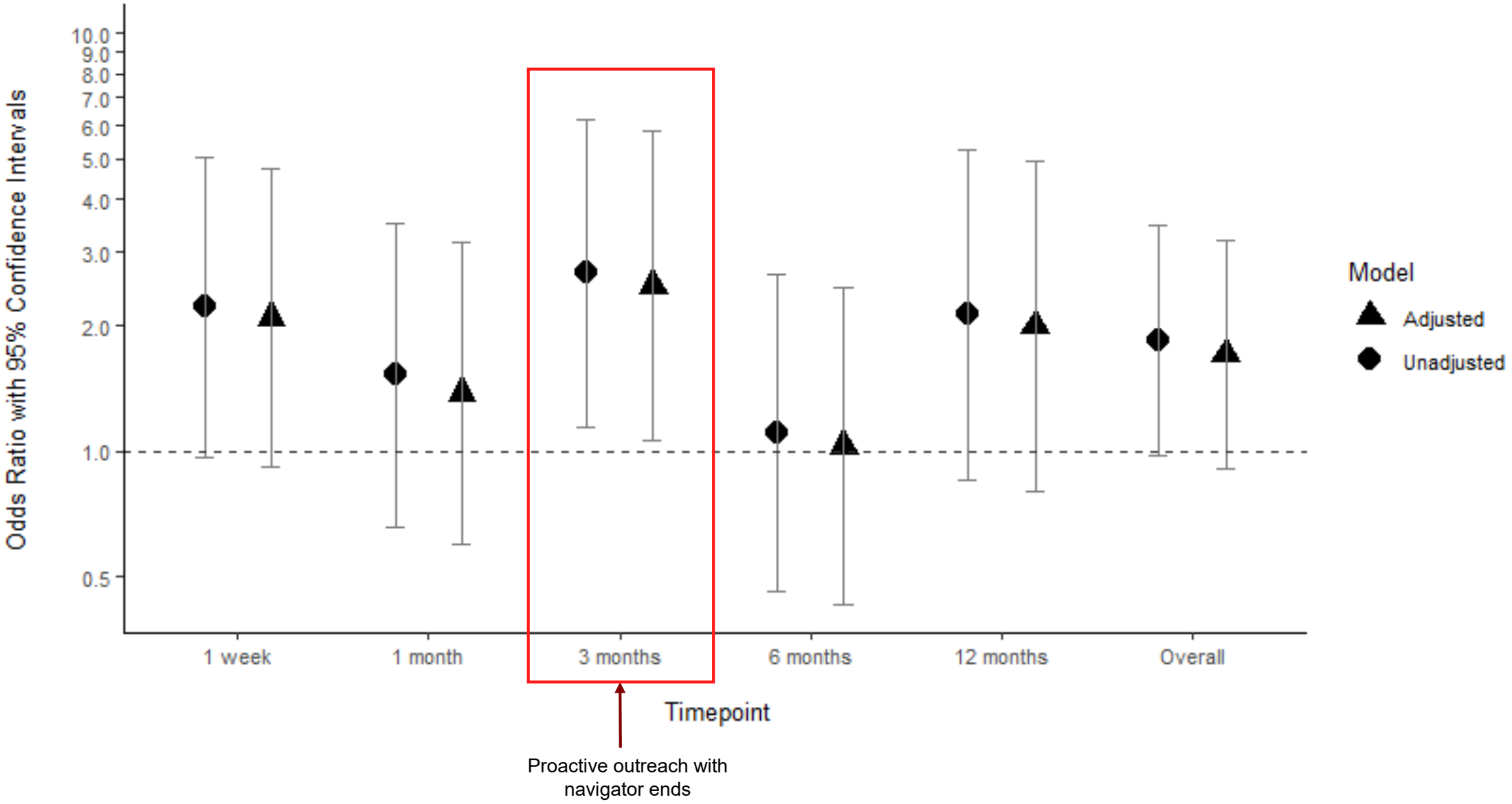
≥ 1 Hospital Visit

intervention group **15%** vs. controls **34%**

Healthcare Utilization



Child Health



Discussion

- High rate of ad hoc resources requested by participants over the study period, including urgent need resources (e.g., safety)
- Engagement with intervention was high (approximately a third requested an additional healtheRx)
- CommunityRx reduced number of ED visits at 12 months for children of caregivers with FI
  - Suggests value of universal approach
  - Highly scalable
- Non-significant effect on hospitalization
- Largest, positive intervention effect on child health at 3 months (when proactive outreach ended)
- Limitations: self-reported healthcare utilization; single region; COVID-19; Feed1st

Conclusion

- A low-intensity, high scale social care assistance intervention beginning with pediatric hospitalization is effective and may be sustainable by improving child health and reducing acute healthcare utilization

Thank you.