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Implementation and Evaluation of a Quality Improvement Project to Standardize Food Insecurity Screening in a Pediatric Nephrology Clinic

Eva Glenn Lecea

evaglennmd@gmail.com

UCSF: University of California San Francisco https://orcid.org/0000-0003-2944-998X

Erica Winnicki

UCSF: University of California San Francisco

Aris Oates

UCSF: University of California San Francisco

Deborah Franzon

UCSF: University of California San Francisco

Jennifer Evans

UCSF: University of California San Francisco

Delphine Tuot

UCSF: University of California San Francisco

Laura Plantinga

UCSF: University of California San Francisco

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Abstract

Background: Food insecurity is common among children with kidney disease and may worsen health outcomes. Although screening is recommended, implementation in pediatric subspecialty clinics has not been well described.

Methods: Universal in-person screening was developed, implemented, and evaluated at one of the two primary pediatric nephrology clinics at UCSF Benioff Children's Hospitals and compared with a control clinic over a 16-month study period. At the intervention clinic, medical assistants and licensed vocational nurses screened all in-person visits using a validated two-question tool. The second clinic served as the control and continued usual care, in which selected patients were screened during multidisciplinary visits by a renal nurse, dietitian, or social worker. An interrupted time series analysis assessed changes in screening rates over time, and a difference-in-differences analysis compared trends between the intervention and control clinics. Implementation outcomes were evaluated using the RE-AIM framework.

Results: After implementation, screening rates in Clinic A (intervention clinic) increased immediately by 33%, followed by a modest but sustained upward trend of 1.0 percentage point per month. Screening completion was maintained, indicating successful integration into the clinic workflow. Staff initially reported discomfort performing screening due to uncertainty about how to respond to positive results; this improved after workflow refinements, including the introduction of a standardized script and the assignment of a nephrology-specific licensed vocational nurse to support follow-up. Caregivers reported high comfort with the screening process.

Conclusions: Food insecurity screening was feasible and acceptable in a pediatric nephrology clinic, with clear workflows and defined roles supporting sustainability.

Background and Objectives

Food insecurity (FI) is a prevalent and pervasive social and medical concern in the United States. Per the most recent report of the US Department of Agriculture (USDA), FI affected 17.9% of US households with children (6.5 million households) in 2023 [1]. Despite the importance of FI on pediatric health, it may often go unrecognized, as evidenced by clinics where detection of FI rose substantially after routine screening was implemented [2,3]. For this reason, the American Academy of Pediatrics (AAP) issued a policy statement in 2015 recommending FI screening in pediatric primary care settings, with referral of families to appropriate resources and coordination of care with community partners as needed, including philanthropic organizations, faith-based communities, local food pantries, and government resources such as the Supplemental Assistance Nutrition Program (SNAP) and the Women, Infants and Children (WIC) Supplemental Nutrition Program [4–6].

The two-item Hunger Vital Sign [7] (HVS) has been validated in large pediatric populations and demonstrates high sensitivity for detecting food insecurity. Its clinical utility is supported by peer-reviewed studies [8], and the AAP recommends its use for routine screening as part of addressing social

drivers of health (SDoH).[4] Many health systems have successfully implemented FI screening using the HVS alongside referral workflows, showing both feasibility and effectiveness in connecting families to resources [9].

While most published work has focused on primary care, there is growing evidence that specialty clinics are uniquely positioned to address pediatric social needs. Although the AAP does not specifically comment on FI screening in a subspecialty practice, many children with chronic medical conditions are at higher risk of FI,[10] and they interact with their subspecialty clinical teams more frequently than with their primary care clinicians [6,11,12], potentially creating a trustworthy environment for screening. Furthermore, it remains unclear whether SDoH screening is consistently conducted in community pediatric primary care practices that refer patients to health systems for specialty care [13–15]; as a result, specialty clinics may represent the only point of contact within the medical system where such screening occurs.

This consideration is particularly relevant in pediatric nephrology. For children with kidney disease, the importance of nutrition goes beyond general wellness; it is central to metabolic control [16]. As such, addressing food insecurity is a core component of high-quality nephrology care delivery. To address this gap, we assessed the current state of FI screening at the two main pediatric nephrology clinic sites at UCSF Benioff Children's Hospitals and then designed and evaluated the implementation of a standardized FI screening process at one of these clinics, while using the other main clinic as a control. The primary objectives of this quality improvement initiative were to develop, implement, and evaluate the implementation of a universal FI screening intervention using the HVS, embedded in the Electronic Health Record (EHR) and administered by medical assistants (MAs) and licensed vocational nurses (LVNs) during routine pediatric nephrology clinic visits.

Methods

Study design, participants and setting

This study employed a prospective type 1 hybrid implementation design with qualitative and quantitative components. The intervention introduced universal food insecurity screening, defined as screening all patients attending in-person clinic visits, and was compared with routine targeted screening. The intervention was implemented in Clinic A from September 2024 through August 2025, followed by a 4-month follow-up period through December 2025 to assess maintenance. A second clinic (Clinic B) served as a control group and continued routine care. Clinic A was selected for implementation because of leadership buy-in. The study protocol was submitted to the Human Research Protection Program Institutional Review Board (Number: 26-45842) and was determined to constitute non–human subjects research.

Prior to implementation of the intervention, both nephrology clinics used a targeted approach to food insecurity screening that was limited to patients enrolled in the California Children's Services (CCS) program. This group comprised approximately 10–20% of the overall clinic population. Eligibility for CCS

requires a CCS-eligible medical condition (e.g., hypertension or chronic kidney disease), residence in California, and financial eligibility (e.g., family income ≤$40,000), making it a logical initial population in which to pilot food insecurity screening at both clinics. Enrolled patients also participate in annual multidisciplinary visits, during which patients are seen by a multidisciplinary care team that includes a dietitian, social worker, nephrology nurse, and a physician or nurse practitioner. Food insecurity screening was mainly conducted during these encounters.

Clinic B maintained this targeted CCS-based screening approach throughout the study period and served as the control site. In contrast, Clinic A implemented universal screening, expanding screening beyond CCS-enrolled patients to include all patients presenting for in-person visits.

Intervention

The intervention consisted of three core components: 1) implementation of universal food insecurity screening using the HVS, embedded directly within the EHR; 2) integration of the screening into the vital signs workflow, to be completed by MAs or LVNs during the rooming process; and 3) referral of families who screened positive to local food resources using FindHelp.org, a software platform for coordinated social care [17].

Implementation Strategies

The implementation strategies were informed by the Behavior Change Wheel framework, [18] targeting barriers identified across the Capability, Opportunity, and Motivation (COM-B) domains, outlined in Table 1. Key intervention functions included 1) education (staff training on the relevance of food insecurity and standardized screening workflows), 2) environmental restructuring (embedding screening as a required EHR field during the rooming process), 3) enablement (provision of quick-reference materials and staff directed workflow changes), and 4) reinforcement (use of performance feedback and staff recognition).

Measures for program evaluation and data sources

Evaluation of the intervention was guided by the RE-AIM framework, an implementation science framework designed to support the adoption, effectiveness, and sustainability of evidence-based interventions [19,20]. RE-AIM structures program evaluation across five domains: Reach, Effectiveness, Adoption, Implementation, and Maintenance; these are presented in Table 2 with corresponding measures from this initiative.

Reach was assessed by comparing patient demographic characteristics, including age, sex, preferred language, and race/ethnicity, between all screened and unscreened in-person encounters from the two-outpatient academic urban pediatric nephrology clinics. Effectiveness was evaluated by measuring the proportion of eligible encounters during which food insecurity screening was completed using the HVS and documented in the EHR. Eligible encounters were defined as visits in which the patient or caregiver, if the patient was a minor, had not undergone food insecurity screening within the preceding 6 months, indicated by the absence of prior documentation in the EHR Social Drivers of Health (SDoH) tab.

Adoption was assessed among MAs and LVNs using the Acceptability of Intervention Measure (AIM) survey, a four-item survey rated on a 5-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree). Adoption and acceptability from patients and caregivers were evaluated with a four-item post-visit survey administered by telephone assessing acceptability of the intervention, comfort with the screening process, perceived helpfulness of resources provided, and preferred frequency of food insecurity screening, Answers were rated on a 5-point Likert scale (1 = completely disagree to 5 = completely agree). All 51 patients and caregivers who screened positive for food insecurity were invited to participate; among those who screened negative, a random sample of 13 was selected. Qualitative data were also collected from patients, caregivers and staff from clinic A to assess the intervention's acceptability and to identify perceived barriers and facilitators to implementation.

Implementation was evaluated by tracking iterative workflow refinements through documented Plan–Do–Study–Act (PDSA) cycles, including meeting notes and process maps. Fidelity of referral workflow implementation was evaluated by calculating the proportion of encounters with a positive HVS screen that had a documented referral to food resources via FindHelp.org. Maintenance was assessed through a post-implementation sustainability survey administered to staff using the Provider Report of Sustainment Scale (PRESS), a three-item instrument rated on a 5-point Likert scale (0–4) supplemented by open-ended questions and by continued monitoring of FI screening completion rates for four months following the final workflow modification.

Data Analysis

Descriptive statistics were used to summarize patient and encounter characteristics. To assess equitable reach of the intervention, demographic characteristics (age, sex, preferred language, and race/ethnicity) were compared between screened and unscreened encounters using chi-square analysis.

Program effectiveness and maintenance, defined as the impact of the universal screening intervention on food insecurity screening rates, were evaluated using a difference-in-differences analysis within an interrupted time series design, comparing rates of FI screening completion during eligible encounters before and after implementation in Clinic A with contemporaneous screening rates in Clinic B.

The primary outcome was the monthly proportion of eligible encounters with documented FI screening, defined as the number of eligible encounters with documentation of the Hunger Vital Sign (HVS) in the electronic health record (EHR) divided by the total number of eligible encounters. Encounters were considered eligible if at least 180 days had elapsed since the patient's last FI screening. If more than one encounter occurred within the 180-day period, only the first encounter was considered eligible.

Survey data evaluating adoption and acceptability among staff, patients and caregivers, as well as sustainability among staff, were summarized using descriptive statistics, including proportions, means, and median with ranges.

Qualitative data from open-ended survey responses and informal staff feedback were categorized using a rapid qualitative analysis methodology [21].

All analyses were conducted as part of a quality improvement initiative and focused on implementation outcomes rather than downstream clinical outcomes.

Results

Intervention Evaluation

Reach

Between September 1, 2024, and December 30, 2025, a total of 2,007 pediatric patients attended in-person visits across the two pediatric nephrology clinics, accounting for 3,771 encounters. Of these, 786 patients were seen at Clinic A (the intervention clinic), representing 1,908 total encounters, of which 1,116 were eligible for screening. Demographic characteristics of the 2007 patients are summarized in Table 3. The mean age was 11.4 years, and the majority identified as Latinx (50.7%). Most patients were English-speaking (64.7%), followed by Spanish-speaking (30.1%). Demographic characteristics were generally similar between Clinic A and Clinic B, except for age and race/ethnicity; Clinic A had a higher proportion of patients aged ≥18 years, a lower proportion of Latinx and Black patients, and a higher proportion of White and Asian/Pacific Islander patients.

At Clinic A, demographic characteristics were similar among patients seen during eligible encounters in which food insecurity screening was completed (n=503) and those in which it was not (n=623), except for age. Screening was more frequently completed during eligible encounters of older patients (>12 years) compared to younger patients (<12 years) (Table 4).

Effectiveness

Of the 1116 eligible encounters between September 1, 2024, and December 30, 2025, 503 (45%) received food insecurity screening. During the baseline month of September 2024, screening was completed in 3 of 49 eligible encounters (6.1%). Following implementation of the Plan–Do–Study–Act cycles, screening increased to 33 of 60 eligible encounters (55.0%) during the month of August 2025, the final month of the intervention period. By the end of the follow-up period, screening further increased to 58 of 76 eligible encounters (76.3%) during the month of December 2025. Interrupted time series analysis demonstrated that pre-implementation, screening rates were fairly stable, with no statistical significance in trend in either clinic. After implementation, there was a 33% immediate step increase in screening rate in Clinic A (intervention clinic) relative to Clinic B (control clinic), followed by a modest but sustained upward trend of 1.0% per month in the intervention clinic, with no change in screening rates over time in Clinic B. The difference in slope of FI screening trends between the two clinics after intervention began was statistically significant (Figure 2, $p < 0.001$).

Throughout the 16-month study period, 51 eligible encounters (3.5%) screened positive for food insecurity. Of these encounters, only 27 (52.9%) included a documented referral to community food resources through FindHelp.org.

Adoption - Staff

All six staff members who administered the food insecurity screening in Clinic A completed the Acceptability of Intervention Measure survey. Acceptability had mean score of 3.96 out of 5 (median 4 and range 2-5). Clinic staff were overall in agreement with the importance of screening for food insecurity: *"It's a good tool that'll help us know if patients need resources or help."* However, most felt uncomfortable with the screening process: *"Some parents may feel uncomfortable answering the questions" and "I can get uncomfortable asking financial questions."* A few suggested different methodologies for screening*: "I went to my daughter's PCP's office. The front desk handed me a laminated paper with the food insecurity questions. I felt comfortable answering to paper rather than to a person"*.

Adoption – Patients/Caregivers

Of 64 patients/caregivers contacted by phone, 48 were reached, and 46 agreed to complete the survey for a response rate of 72% (n=46/64). Perceived appropriateness of food insecurity screening in the pediatric nephrology clinic was high (mean 4.49, median 5, range 3–5 on a 5-point scale). Participants also reported high comfort with answering screening questions (mean 4.28, median 5, range 2–5) and high perceived helpfulness of the resources provided (mean 4.44, median 5, range 1–5), as shown in figure 2.

Regarding preferred screening frequency, 35% (n=16/46) participants indicated that screening every 6–12 months was appropriate, 24% (n=11/46) preferred screening at every visit, 22% (n=10/46) preferred screening every 3–6 months, 11% (n=5/46) preferred annual screening, and 7% (n=3/46) reported that they were unsure or that it would depend on the situation.

When asked for overall feedback, most patients and caregivers expressed appreciation for being asked about food insecurity, particularly in the context of a changing economic environment, even when resources were not immediately needed. Participants noted that screening could help identify needs that families may be hesitant to raise on their own: *"I think it's good that you ask these questions, because sometimes there are people who don't have enough to eat,"* and *"Some people may be shy to ask for help, so I think it's good that the clinic is asking."* Others valued the broader sense of support conveyed by the screening process, describing it as *"nice to be asked about things like this, like how I'm doing at home."* Appreciation for the availability of resources was also common, with participants stating, *"The clinic does a good job getting resources to help,"* and *"Information on resources should be offered to everyone because the economy can change rapidly."* Some participants noted initial discomfort that resolved over time, such as *"At first it felt weird to be asked these questions, but then I realized it's a good thing."*

Several barriers were also identified. Some participants reported challenges accessing resources due to logistical constraints, including transportation limitations: *"I don't have transportation to go to the food pantries."* Others expressed concerns about potential embarrassment associated with screening, particularly for adolescents, noting, *"I'm fine with being asked every visit, but every six months is okay because [my child] may be embarrassed,"* and *"We know these questions are important, but we understand why someone else would frown upon them."* Finally, some participants raised concerns about being screened without a clear pathway to assistance, stating, *"There is no point in asking these questions if nothing will come out of it."*

Implementation

We completed six PDSA cycles during the intervention, informed by the COM-B framework, targeting capability, opportunity, and motivation to improve FI screening. The first cycle (October 2024) focused on adoption by initiating screening using the HVS embedded in the EHR and engaging MAs and LVNs in discussions about the rationale for screening. This resulted in a marked increase in in-person screening rates (from 6% to 72% that month) without increasing perceived workload, though staff expressed concerns about screening a sensitive topic and ensuring appropriate communication of positive results.

Subsequent cycles focused on enabling and reinforcing screening behaviors, incorporating suggestions from clinical staff. In December 2024, a script co-designed with clinical staff was introduced to support MAs and LVNs in conducting screenings and communicating positive results to nephrology nurses. The script was well received and improved resource provision for patients who screened positive. Beginning in January 2025, screening data were shared regularly with staff to reinforce engagement and ensure that all patients with positive screens received resource information. Additional reinforcement strategies included recognizing staff contributions through dissemination of project findings (May 2025), implementing a visual reminder in the clinical workspace by placing a laminated card next to the computer in the vital signs room, engaging front desk staff by empowering them to distribute resource information when a renal nurse was unavailable (July 2025), and providing targeted training for new staff (August 2025). These iterative adaptations addressed barriers identified in earlier cycles and were associated with sustained improvements in screening uptake and resource delivery.

Maintenance

There was a slight but persistent upward trend in monthly FI screening rates by the end of the PDSA cycles, as shown in Figure 1. The mean Provider Report of Sustainment Scale (PRESS) score was 3.50 out of 4, with a median of 4 and a range of 2 to 4, indicating a high level of sustainment perceived among clinic staff. Staff also consistently reported that FI screening had become integrated into routine clinical practice and was prioritized within workflow. One staff member noted, "We are good at adapting," while another stated, "It has become part of our rooming practice. When we take [patients'] vitals, this has become one of the questions that we ask." However, anticipated barriers to sustainability included MAs' competing clinical responsibilities and coverage of other services, particularly other specialty services in which FI screening is not performed. For example, one respondent shared, "We try to [ask] the insecurity

question as much as possible. We do work with other departments as well, but we try our best," while another noted, "Given the fact that we work with other departments alongside renal, we all try our best to remember to ask the food insecurity questions and make it part of the rooming process. In busy clinics, it may be hard to remember or even skipped."

Discussion

With this quality improvement initiative, we demonstrated that universal FI screening in a pediatric subspecialty setting, specifically within a pediatric nephrology clinic, is feasible and can be successfully implemented into routine clinical care, demonstrating strong reach, adoption, implementation, effectiveness, and maintenance.

Screening was taken up readily by MAs and LVNs and incorporated into existing workflows. Screening completion increased markedly following implementation and was sustained over time. These findings highlight that pediatric subspecialty clinics, which care for children at increased risk for food insecurity and its downstream health effects, represent a feasible setting to expand the reach of food insecurity screening and connection to resources.

Although screening was successfully implemented, connection to resources following identification of food insecurity was documented in only 53% of positive screens. This gap reflects challenges with care coordination and unclear workflows in the intervention clinic. In some instances, MAs and LVNs did not consistently communicate positive screening results to nursing staff, resulting in suboptimal connection to resources. When nurses were unavailable and providers were notified directly, providers often did not document whether any action was taken to address the identified need, which may have resulted in less documentation, but appropriate referrals. These findings underline the important distinction between screening and ensuring an appropriate response. Through iterative PDSA cycles, these barriers were addressed by establishing a nephrology-specific LVN role responsible for both conducting screening and facilitating connection to resources. This refinement clarified responsibilities, improved care coordination, and strengthened the consistency of follow-up.

The FI screening workflow was acceptable to both staff and patients/caregivers, supporting its potential for long-term maintenance. Early in implementation, some staff members responsible for administering the screening reported discomfort with asking questions about food insecurity. Although they recognized the importance of screening, they expressed concerns about how patients and caregivers might perceive these questions. Through iterative PDSA cycles and workflow refinements, including the co-creation of a screening script with staff, staff reported increased comfort with the screening process over time, although some discomfort persisted. This highlights the importance of involving frontline staff and making practical adjustments to address concerns as they arise. Interestingly, staff perceptions did not fully align with patients' and caregivers' experiences, as patients and caregivers reported feeling comfortable being asked about food insecurity. This difference is consistent with prior studies showing that healthcare staff often anticipate greater discomfort around social risk screening than patients

actually experience [22,23]. Providing staff with training, integrating screening into routine workflows, and incorporating ongoing feedback may be important for ensuring successful implementation and long-term sustainability.

Interestingly, the prevalence of FI identified in our study was lower than what has been reported in similar pediatric populations with kidney disease [24–27]. Several factors may explain this finding. Although some prior work has suggested that written or self-administered screening may facilitate more candid disclosure of social risks [28], differences in disclosure between self-completed and staff-administered screening were small in a recent randomized study [29], suggesting that mode of administration alone may not fully explain the lower prevalence observed in our population. Another important consideration is reach, as patients and families experiencing higher levels of social risk may be more likely to miss subspecialty appointments or have inconsistent engagement with subspecialty care [30,31], and therefore may be underrepresented in clinic-based screening efforts. Additionally, subspecialty populations may differ in socioeconomic composition or may already be connected to other community support systems.

Screening rates were lower among families of children younger than six years. The reason is unclear but may reflect competing priorities during visits for younger children, or time constraints in these encounters. Additional evaluation of workflow and staff decision-making may help address these gaps in screening rates by age and race/ethnicity.

Our findings highlight important equity and implementation considerations. Subspecialty in-person clinic-based screening alone may not fully capture families experiencing the greatest social vulnerability if structural barriers limit their ability to attend the visits. Complementary approaches, such as universal screening in primary care, during telehealth encounters, or through broader health system initiatives, may be necessary to ensure equitable identification and support of families with unmet needs. Furthermore, the successful integration of screening into existing workflows without requiring substantial additional staffing suggests that this model may be scalable and adaptable to other pediatric subspecialty settings, particularly when roles and responsibilities for screening response are clearly defined.

This study has several limitations. It was conducted at a single academic medical center, which may limit generalizability to other subspecialty settings or populations. Additionally, while screening enabled identification of families with unmet needs, documentation of resource connection was incomplete early in implementation. Finally, this study was not designed to evaluate long-term outcomes of universal FI screening such as changes in food security status, clinical outcomes, or healthcare utilization.

Conclusions

Food insecurity screening in a pediatric nephrology clinic was feasible, acceptable, and sustainable, demonstrating strong performance across multiple RE-AIM domains. Screening was successfully integrated into routine clinical workflow and enabled identification of families with unmet social needs. Early implementation revealed gaps in follow-up documentation and care coordination, highlighting the

importance of clearly defined roles and iterative workflow refinement to ensure reliable connection to resources. Pediatric subspecialty clinics represent an important setting to identify and address food insecurity among medically complex children. Future efforts should aim to improve equitable reach, ensure more consistent connection to resources, and evaluate the long-term effects of screening and resource referral on patient and health outcomes.

Declarations

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Tables

Table 1

Barriers and Strategies to Behavior Change using the COM-B model

Barrier Targeted	COM-B Component	Intervention Functions	Behavior Change Techniques	Mode of Delivery
Limited knowledge of food insecurity relevance and screening/referral process	Psychological Capability	Education; Enablement	• Educational session on the Hunger Vital Sign and food insecurity in kidney care • Quick reference guide in clinic • In-person demonstration	Staff training, Printed reference sheet
Competing demands and limited time during rooming	Physical Opportunity	Environmental restructuring; Enablement	• Embed screening in EHS vital sign workflow • Visual prompts in vital sign room	Workflow modification
Uncertainty about what to do after a positive screen	Psychological Capability / Opportunity	Enablement	• Step-by-step Findhelp referral guide • Clear communication pathway to nephrology nurse, provider	Staff huddle training
Low perceived importance of screening compared with clinical tasks	Reflective Motivation	Persuasion; Modeling	• Leadership endorsement in meetings • Role modeling by senior staff emphasizing equity and nutrition • Share patient stories (de-identified) illustrating relevance	Team meetings, email updates, staff orientation
Limited feedback or recognition for screening efforts	Automatic Motivation	Incentivization; Feedback	• Quarterly performance dashboards • Recognition of high-performing staff in meetings and e-mails • Team-level completion rate goals	EHS data dashboard; staff meeting acknowledgment

Table 2

RE-AIM Indicators and Measurement Approaches

RE-AIM Dimension	Indicators	Measurement Method	Type
Reach	• Demographic characteristics (age, sex, language, race/ethnicity) of those screened vs. not screened.	• Compare EHR-derived patient demographics of screened vs. unscreened populations using descriptive statistics.	• Quantitative
Effectiveness	• % of monthly eligible pediatric nephrology patients screened for food insecurity, compared to a control pediatric nephrology clinic	• Extract screening completion rates from EHR.	• Quantitative
Adoption	• MAs/LVNs acceptability and satisfaction with screening and workflow. • Caregiver satisfaction with the screening process.	• Conduct validated survey to assess acceptability (AIM) and open-ended questions. • Administer brief post-visit caregiver surveys (4 questions) assessing adoption and acceptability.	• Mixed Methods
Implementation	• PDSA (Plan–Do–Study–Act) cycles.	• Track iterative workflow refinements through documented PDSA cycles (meeting notes, process maps).	• Qualitative
Maintenance	• Screening rate sustained ≥ 70% at 10- and 16-months post-implementation. • Integration of screening metrics into routine QI dashboards. • Survey of MAs and LVNs on whether they think the workflow is likely to continue indefinitely.	• Longitudinal tracking of screening completion rates • Monitor presence of screening metrics on division dashboards • Conduct post-implementation sustainability survey among staff (PRESS).	• Mixed methods

Table 3
Characteristics of Patients in Two Pediatric Nephrology Clinics from September 2024 - December 2025 (N = 2007).

	All		Clinic B		Clinic A		
	N = 2007	%	N = 1221	%	N = 786	%	p-value
Age, Mean (SD)	11.4	6.5	11.1	6.3	11.8	6.7	0.01
Age, Categorized							
0–2 Years	239	11.9	147	12.0	92	11.7	< 0.001
3–5 Years	189	9.4	108	8.8	81	10.3	
6–11 Years	519	25.9	332	27.2	187	23.8	
12–17 Years	756	37.7	497	40.7	259	33.0	
18 + Years	304	15.1	137	11.2	167	21.2	
Sex At Birth							
Female	809	40.3	482	39.5	327	41.6	0.47
Male	1,197	59.6	738	60.4	459	58.4	
Unknown/Declined	1	0.0	1	0.1	0	0.0	
Race/Ethnicity							
Asian/Pacific Islander	223	11.1	98	8.0	125	15.9	< 0.001
Black Or African American	151	7.5	114	9.3	37	4.7	
Latinx	1,017	50.7	698	57.2	319	40.6	
White	248	12.4	81	6.6	167	21.2	
Native American Or Alaska Native	5	0.2	2	0.2	3	0.4	
Multi-Race/Ethnicity	96	4.8	53	4.3	43	5.5	
Other	177	8.8	130	10.6	47	6.0	
Unknown/Declined	90	4.5	45	3.7	45	5.7	
Preferred Language							
English	1,299	64.7	669	54.8	630	80.2	0.34
Spanish	604	30.1	470	38.5	134	17.0	

	All		Clinic B		Clinic A		
	N = 2007	%	N = 1221	%	N = 786	%	p-value
Chinese	22	1.1	15	1.2	7	0.9	
Arabic	18	0.9	14	1.1	4	0.5	
Other	64	3.2	53	4.3	11	1.4	

Table 4

Screening Status during Eligible Patient Encounters in the Clinic A (intervention clinic) from September 2024 - December 2025 (N = 1116).

	All		FI Screening				
			Not Screened		Screened		
	N = 1126	%	N = 623	%	N = 503	%	p-value
Age, Categorized							
0–2 Years	96	8.5	67	69.8	29	30.2	< 0.001
3–5 Years	117	10.4	82	70.1	35	29.9	
6–11 Years	270	24.0	152	56.3	118	43.7	
12–17 Years	362	32.1	186	51.4	176	48.6	
18 + Years	281	25.0	136	48.4	145	51.6	
Sex At Birth							
Female	464	41.2	261	56.3	203	43.8	0.66
Male	662	58.8	362	54.7	300	45.3	
Race/Ethnicity							
Asian/Pacific Islander	178	15.8	106	59.6	72	40.4	0.30
Black Or African American	45	4.0	23	51.1	22	48.9	
Latinx	477	42.4	255	53.5	222	46.5	
White	235	20.9	130	55.3	105	44.7	
Native American Or Alaska Native	4	0.4	0	0.0	4	100.0	
Multi-Race/Ethnicity	64	5.7	36	56.3	28	43.8	
Other	63	5.6	35	55.6	28	44.4	
Unknown/Declined	60	5.3	38	63.3	22	36.7	
Language							
English	900	79.9	504	56.0	396	44.0	0.17
Spanish	196	17.4	97	49.5	99	50.5	
Chinese	15	1.3	11	73.3	4	26.7	

	All		FI Screening			
			Not Screened		Screened	
Arabic	2	0.2	2	100.0	0	0.0
Other	13	1.2	9	69.2	4	30.8

Figures

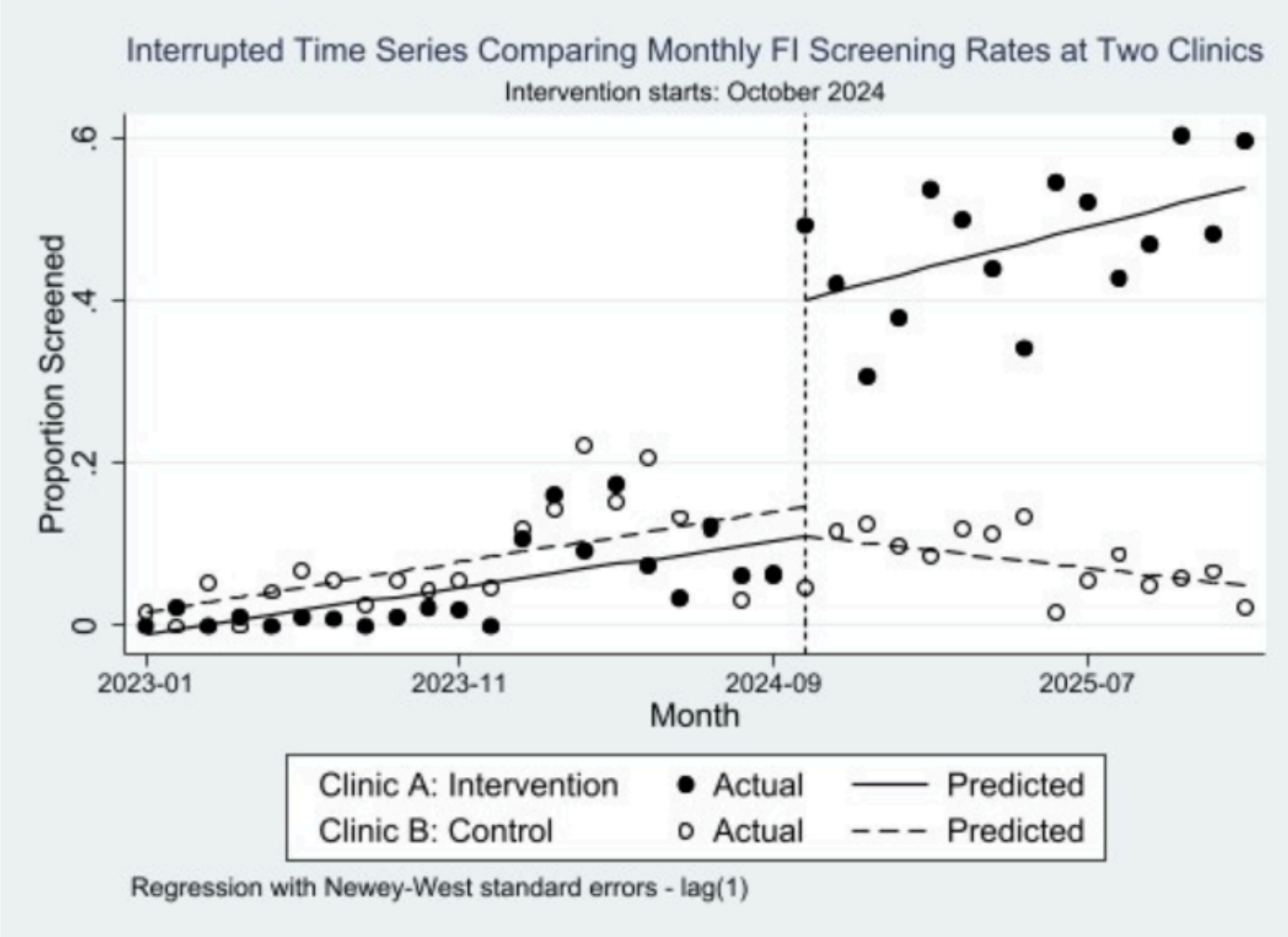


Figure 1

Monthly proportions of patients screened for food insecurity are shown for Clinic A (intervention) and Clinic B (control) from January 2023 through December 2025. The vertical dashed line indicates the start of the intervention in October 2024. Solid and dashed lines represent predicted trends based on regression models, while points denote observed values. Following the intervention, Clinic A

demonstrates a marked increase in screening rates relative to its pre-intervention trend, whereas Clinic B shows no comparable change. Regression models incorporate Newey–West standard errors (lag 1) to account for autocorrelation.

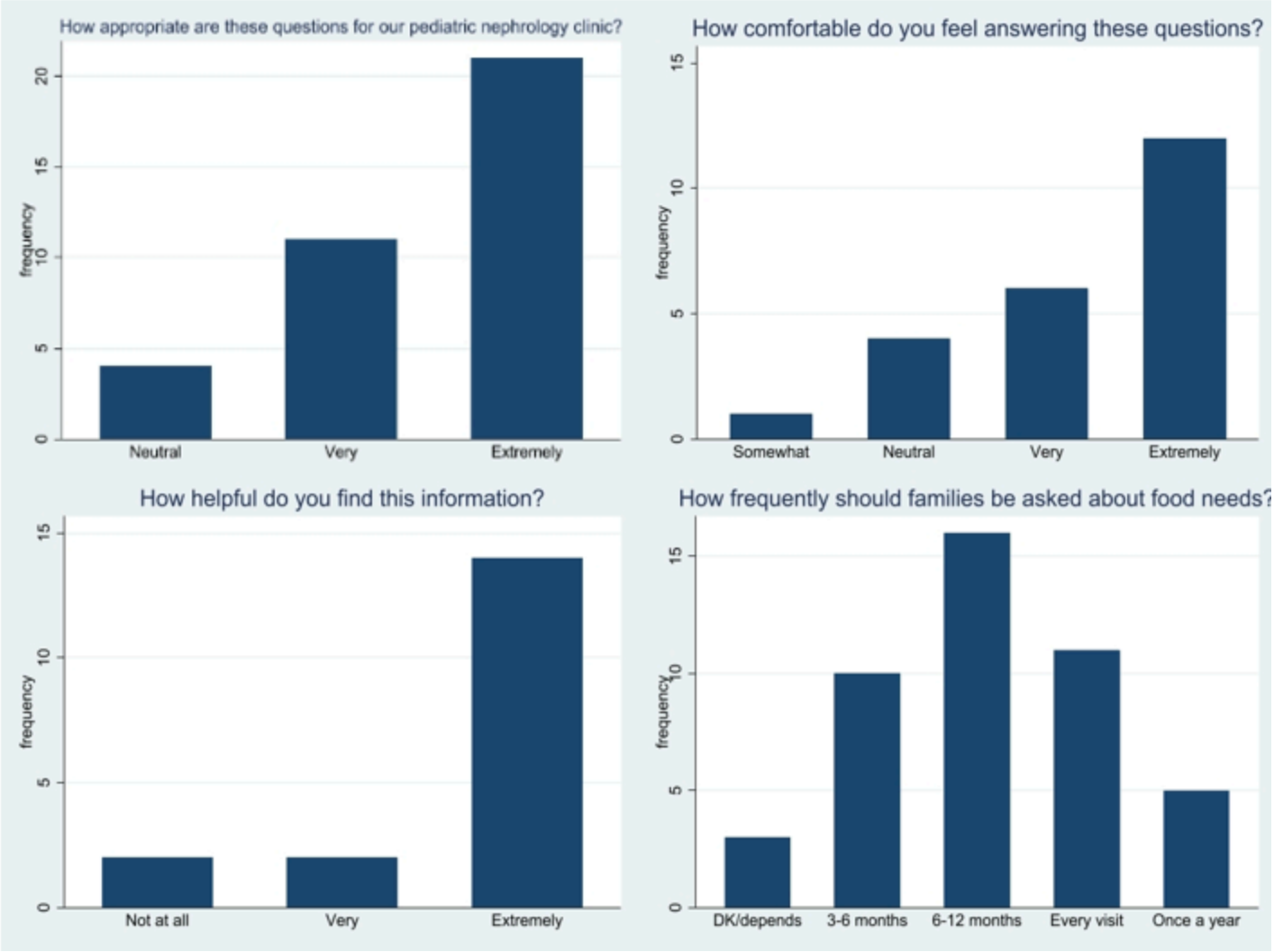


Figure 2

Four bar charts summarize responses to acceptability survey questions in a pediatric nephrology clinic. Most respondents rated the questions as “Extremely” or “Very” appropriate and reported feeling “Very” or “Extremely” comfortable answering them. The majority also found the information “Extremely” helpful. Regarding preferred screening frequency, responses varied, with most favoring screening every 6–12 months, followed by every 3–6 months, while fewer preferred screening at every visit, annually, or only during kidney disease visits.