

Referral and Resource Utilization Among Food Insecure Families

RESULTS

Figure 1. Flowchart: FI Screen to Resource Connection

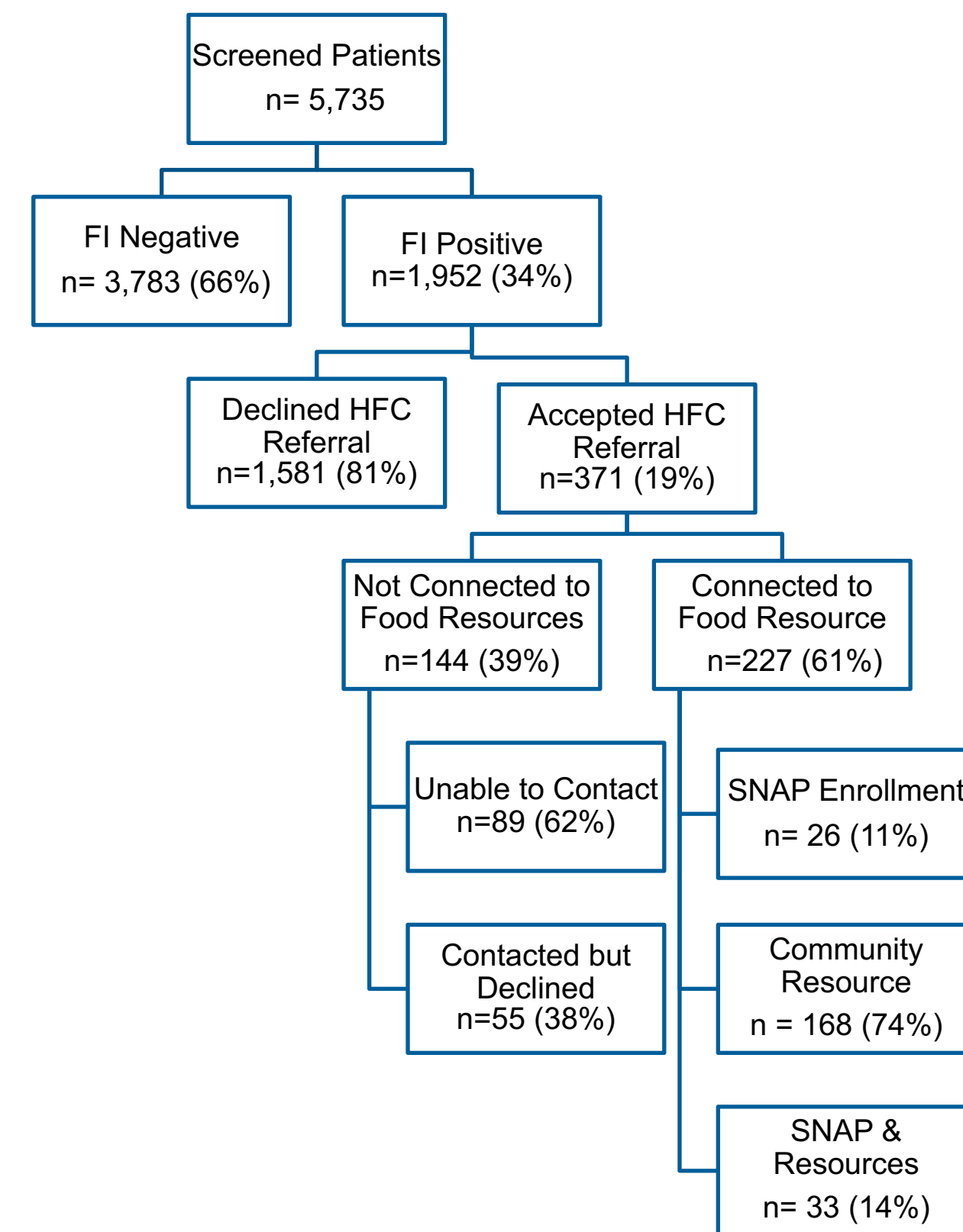


Table 1. Overview of Screened Cohort

Variable	Total, n (%)
Total, n (%) n = 5,735	
Patient Age 0-4 years	3,047 (53%)
White Race	2,148 (39%)
Not Hispanic or Latino	3,172 (57%)
Public/Pending Insurance	3,207 (56%)
Screening Location	
Child Health Clinic (CHC)	3,612 (63%)
Special Care Clinic (SCC)	1,295 (23%)
Emergency Department (ED)	607 (11%)
Inpatient	221 (4%)

BACKGROUND

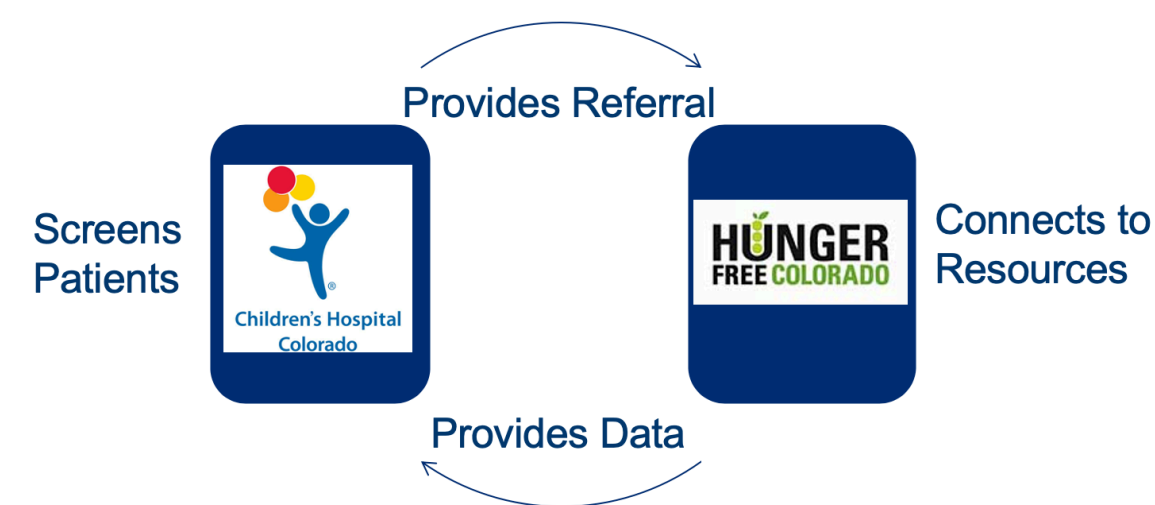
- **Food Insecurity (FI)**, the lack of consistent access to enough food to lead an active & healthy lifestyle¹, negatively impacts child health²
- Despite increased screening & detection, many FI families are not connected to food resources³
- CHCO has partnered with Hunger Free Colorado (HFC) since 2016 to refer FI families for food resource navigation

Aims

- 1) Describe utilization of community-based organization (CBO) referral & supplemental food resources after screening positive for FI
- 2) Identify patient, family, and system characteristics associated with referral and resource utilization

METHODS

- Population: Patients age 0-18 with FI+ screen⁴ in CHC, SCC, ED, or Inpatient setting from January 2017-December 2018



- Merged CHCO screening, HFC referral, and chart review data
- Outcome measures:
 - 1) Referral to HFC
 - 2) Connection to resources
- Compared demographic data between groups using Pearson's Chi-square, Kruskal Wallis test, & Poisson regression

Table 2. Accepted v. Declined HFC Referral

Variable	Accepted HFC Referral n=371	Declined HFC Referral n=1,581	P-value
Race			0.175
White	115 (31%)	562 (37%)	
African American	109 (30%)	413 (27%)	
Other	142 (39%)	563 (37%)	
Ethnicity			0.451
Not Hispanic or Latino	190 (52%)	832 (54%)	
Hispanic or Latino	176 (48%)	706 (46%)	
Screening Location*			<0.001
Child Health Clinic	227 (61%)	959 (61%)	
Special Care Clinic	14 (4%)	345 (22%)	
Emergency Department	106 (29%)	220 (14%)	
Inpatient	24 (7%)	57 (4%)	
Insurance*			0.008
Public	207 (56%)	1,010 (64%)	
Private	28 (8%)	123 (8%)	
Self-Pay	133 (36%)	442 (28%)	
Additional Social Need			0.085
No	61 (16%)	206 (13%)	
Yes	310 (84%)	1,375 (87%)	

*Also significant in multivariable analyses

No significant difference in other variables examined: median household income, patient age, or rural v. urban residence

Table 3. Connected v. Not Connected to Food Resources

Variable	Connected to Resource n=227	Not Connected to Resource n=144	P-value
Number of People in Home*	3 (2-4)	2 (2-2)	<0.001
Race			0.871
White	70 (32%)	45 (31%)	
African American	64 (29%)	45 (31%)	
Other	88 (40%)	54 (38%)	
Ethnicity			0.181
Not Hispanic or Latino	109 (49%)	81 (56%)	
Hispanic or Latino	113 (51%)	63 (44%)	
Country of Guardian ID			0.031
USA	171 (78%)	122 (87%)	
Other	48 (22%)	18 (13%)	
Primary Language			0.046
English	168 (74%)	121 (84%)	
Spanish	55 (24%)	20 (14%)	
Other	4 (2%)	3 (2%)	
Screening Location			0.712
Child Health Clinic	135 (60%)	92 (64%)	
Special Care Clinic	10 (4%)	4 (3%)	
Emergency Department	68 (30%)	38 (26%)	
Inpatient	14 (6%)	10 (7%)	
Insurance			0.054
Public	137 (61%)	70 (49%)	
Private	14 (6%)	14 (10%)	
Self-Pay	73 (33%)	60 (42%)	

*Also significant in multivariable analyses

No significant difference in other variables examined: median household income, guardian age, patient age, rural v. urban residence, SNAP status, PCP visit within 1 year, ED visit within 1 year, BMI percentile at screening visit

CONCLUSIONS

- Minority (12%) of families with FI are connected to resources
- Most patient attrition occurs at time of referral to CBO
- Families screened in the ED & inpatient setting were most likely to accept referral; SCC patients were least likely to accept referral.
- Families with more people in the home were more likely to be connected to resources

IMPLICATIONS

- Increased ED and inpatient screening efforts may be beneficial for FI families
- Need to work with families to design referral systems that streamline processes and reduce stigma

REFERENCES

1. USDA (2018). "Definitions of Food Security." Retrieved 11/26/2018.
2. Cook JT, Frank DA, Berkowitz C, Black MM, Casey PH, Cutts DB, et al. Food insecurity is associated with adverse health outcomes among human infants and toddlers. The Journal of nutrition. 2004;134(6):1432-8
3. Stenmark SH, Steiner JF, Marpadga S, Debor M, Underhill K, Seligman H. Lessons Learned from Implementation of the Food Insecurity Screening and Referral Program at Kaiser Permanente Colorado. The Permanente journal. 2018;22:18-093.
4. Hager ER, Quigg AM, Black MM, et al. Development and validity of a 2-item screen to identify families at risk for food insecurity. Pediatrics. 2010;126(1):e26-32

DISCLOSURES

- None