ORIGINAL RESEARCH

Food Insecurity Screening in Safety-Net Clinics in Los Angeles County: Lessons for Post-Pandemic Planning

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Introduction: **Food insecurity is a major public health problem in the United States which was exacerbated by the COVID-19 pandemic. We used a multi-method approach to understand barriers and facilitators to implementing food insecurity screening and referrals at safety net health care clinics in Los Angeles County before the pandemic.**

Methods: **In 2018, we surveyed 1013 adult patients across eleven safety-net clinic waiting rooms in Los Angeles County. Descriptive statistics were generated to characterize food insecurity status, attitudes toward receiving food assistance, and use of public assistance programs. Twelve interviews with clinic staff explored effective and sustainable approaches to food insecurity screening and referral.**

Results: **Patients welcomed the opportunity to access food assistance in the clinic setting; 45% preferred discussing food issues directly with the doctor. Missed opportunities to screen for food insecurity and refer patients to food assistance were identified at the clinic level. Barriers to these opportunities included: competing demands on staff and clinic resources, difficulty establishing referral pathways, and doubts surrounding data.**

Discussion: **Integrating food insecurity assessment in clinical settings requires infrastructure support, staff training, clinic buy-in, and more coordination and oversight from local government, health center entities, and public health agencies. (J Am Board Fam Med 2022;00:000–000.)**

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Introduction

In 2019, some 13.7 million households in the United States had difficulty procuring food on a regular basis.[1] The US Department of Agriculture defines food insecurity as a "household-level economic and social condition of limited or uncertain access to adequate food."[2] Food insecurity is associated with type 2 diabetes and overall poor health.[3–7] During the coronavirus disease 2019 (COVID-19) pandemic, this condition was accentuated by a dramatic rise in unemployment, with analyses suggesting that in 2020 about a third of all households with children, regardless of income level had difficulty securing food, some of whom were experiencing the phenomenon for the first time.[8] While upstream factors to this condition such as employment status, housing stability, and poverty[9] frequently require macro-level investments and political will, local actions and institutional policies can work to address

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the immediate hunger and nutritional needs of communities.

Primary care clinics are among those areas of practice where such actions can take place. Given that clinics are often the usual and trusted sources of care and health related knowledge for patients, they are particularly well suited to address some of the social determinants of health,[10–12] in particular those health system as well as other upstream, underlying factors that causes food insecurity.[13] Success in administration of screening tools and referrals to local food resources and government assistance have been documented across various patient populations and different types of health settings; for example safety net clinics,[14–16] and pediatric settings.[17] Health care providers can play a vital role in identifying and referring patients who are food insecure. However, while an increasing number of health care providers express willingness to screen for food insecurity, practical day-to-day challenges remain; for instance, not knowing what to do when a patient screens positive.[18] Limited research exists on the barriers to the screening processes including how best to measure this social risk and need with limited time, practical implications for integrating the data in patient electronic health records, and, once measured, how the condition is addressed efficiently and effectively through referral pathways.[13] Additional barriers not well understood are the amount of additional time and workforce costs that are required to collect these individual-level data if screening and referral protocols were being followed in the clinic setting.[13] As such, it is important to understand the full range of barriers and facilitators associated with the stepwise process of screening for food insecurity in safety net clinics. Helpful lessons derived from this work can offer guidance for how local counties and municipalities can potentially address this public health problem.

From 2016 to 2020, the Los Angeles County Department of Public Health (LACDPH) partnered with 5 health care systems and nonprofit organizations to address food insecurity as part of its Supplemental Nutrition Assistance Program–Education (SNAP-Ed) efforts. One aspect of these local SNAP-Ed efforts was the goal to increase capacity and improve processes of local clinics so that food insecurity screening and referrals to nutrition education classes, food pantries, and nutrition assistance programs can occur for patients who are SNAP eligible.[19] In addition, a separate 2017 County of Los Angeles Board of Supervisors' Motion on food insecurity led to efforts to pilot a screening tool and referral pathway for this social condition in 2 county clinic sites.

In this study we used a convergent parallel multi-method design[20] to achieve the following: (a) characterize the profile of patients who experience food insecurity (survey data) in the safety net clinic setting and (b) to contextualize these patients' experiences with screening for this condition at health center clinics serving low-income communities (qualitative, in-depth interview data). Of particular interest to this study was clarifying the mechanisms that connect system and organizational infrastructure with individual-level factors, which when identified can be leveraged to inform policy and programmatic changes in the field.[21]

Methods

Survey Sample

Patients were eligible to participate in the survey if they were over the age of 18 years and resided in the county of Los Angeles. Participant recruitment occurred during Fall 2018 across 11 patient waiting rooms at 4 large public and nonprofit clinics that serve adults who are low-income and Medicaid-eligible. Clinic settings included primary care, pediatrics, women's health, and family medicine, and were located throughout the county. Each clinic was visited on 1 or 2 days. The survey instrument was designed to be self-administered, in English and Spanish, and all participants received a $5.00 gift card. A total of 1013 questionnaires were collected. The overall response rate was 81.1%.

Survey Instrument

The intercept survey was developed to assess patient experiences with food insecurity and their perceived access to support services. The validated Hunger Vital Sign items were used to measure food insecurity status.[22] This 2-question screening tool asked, "Within the past 12 months we worried whether our food would run out before we got money to buy more" and "Within the past 12 months the food we bought just did not last and we did not have money to get more". The answer options were *often true*, *sometimes true*, and *never true*. If a participant answered that either or both of

these statements were *often true* or *sometimes true*, they were classified as "food insecure."

Several questions probed participants on their attitudes related to receiving food insecurity assistance including whether they agree that clinics should help with finding food for them, with whom the participant would be most comfortable sharing their information about lack of food with and for those participants who were not enrolled in SNAP, and reasons why they were not enrolled. Other questions touched on whether staff ever asked participants if they have enough to eat, ever recommended SNAP to them, and based on the referral, did they ever enroll in SNAP.

Demographic questions in the survey instrument included sex, age, race/ethnicity, education, number of children in the household, and whether they participated in a range of social service programs, including SNAP and Medi-Cal (California's Medicaid program).

Qualitative Sample and Protocol

To better understand how the food insecurity screening process and referral pathways worked in practice, 12 interviews were conducted in Fall of 2018 with staff from the 5 LACDPH partnering agencies who were engaged in food insecurity screening and referral. Of the 5 partnering agencies that were initiating or implementing a screening, 4 were health care systems and 1 a nonprofit organization. Agencies were selected to participate in the study because they had preexisting partnerships with LACDPH; either they were implementing SNAP-Ed and food insecurity screenings or had been instructed by the County Board of Supervisors to implement food insecurity screening and referral pathways to food resources. The patient surveys were conducted at these same 4 clinical sites.

Half of the interviews were with staff in clinical leadership positions. The other half were with staff in health education roles. All interviewees were familiar with day-to-day implementation of screening and referral tasks. Interviewees were not offered remuneration for their participation. Table 1 provides a sample of questions that were asked.

Eight of these in-depth interviews were conducted via telephone. Each interview lasted about an hour. Four interviews from 1 of the 2 county clinic sites were conducted by LACDPH before the commencement of this study. Transcripts from these interviews were provided by the department and were included in the overall pool of qualitative data.

All study protocols and materials were approved (Certified Exempt) by the Human Subjects Protection Committee (Institutional Review Board) at the RAND Corporation. Verbal consent was obtained from all participants and interviewees before the start of data collection.

Quantitative Analysis

To assess the specific patient profiles for those at risk of food insecurity, we conducted descriptive analyses and compared responses by food insecurity status using chi-square tests. Analyses were conducted using Stata 16 (StataCorp LLC, College Station, TX).[23]

Qualitative Analysis

During each interview session, a study team member conducted the interview, while another took notes. Each interview was recorded and transcribed by these 2 team members to ensure accuracy of information. All relevant transcripts were uploaded to Dedoose, an online collaborative coding platform, for sorting and analysis purposes.[24] The analysis combined a directed content approach[25] of codes

Table 1. Condensed Sample of Interview Questions, Excluding Probes and Follow-Up

Sample questions for staff at food insecurity screening partnering agencies
1. Please describe the current food insecurity screening and referral process at your organization?
2. Does the current screening instrument meet your agency's needs or the needs of the population you serve?
3. To what resources do you refer patients who have been identified as food insecure?
4. What have been some of the barriers to that have arisen since the screening and referral process started?
5. How did you or your agency try to address some of these barriers?
6. What do you think most contributes to the success of the screening so far?
7. What are the primary outcomes that have resulted from your food insecurity screening and referral process?
8. How has implementation of a food insecurity screening changed your care provision for food insecure patients at your organization?

that were built in the interview protocol with an exploration of new themes unbounded by the protocol domains.[26] Examples of predetermined codes included "referral pathway," "measured outcomes," and "barriers." Examples of grounded themes included "linkage challenges," "competing clinic programs," and "warm hand-off protocol." This pragmatic combination of postpositivist and interpretivist approaches helped us address different aspects of our research questions that neither approach could address alone: what the clinic screening processes were, and how dimensions of the screening varied within and across participants.[27] Each interview was coded by the 2 team members to ensure acceptable reliability. The kappa metric for this part of the analysis indicated a reliability of 0.82, based on 20% of the transcripts.[25,26] Any discrepancies (if any) were resolved by consensus. We followed the American Psychological Association guidelines for qualitative research on this analysis.[30]

Quantitative Results

Participant Demographics

A majority of survey participants were female (76.1%) and the average age was 42.8 (Table 2). Slightly over half completed the survey in English. Three of 4 participants were Latino and 14.9% reported being African American. A little over a quarter of the participants, 26.4%, were enrolled in SNAP/CalFresh and 62.5% in Medi-Cal. A majority of participants experienced food insecurity in the past year, with 60.7% often or sometimes worrying about running out of food and 52.8% reporting that food did not last, and they often or sometimes did not have money to get more.

Attitudes on Receiving Food Insecurity Assistance

Approximately 84.6% of all survey participants agreed or strongly agreed with the statement that clinics should help them find food (Table 3). Those who were food insecure had higher odds of expecting clinics to help them find food than those who were not food insecure (odds ratio [OR], 1.78, 95% confidence interval [CI] 1.26, 2.53). Participants were most comfortable sharing personal information about not having enough to eat "with my doctor." The second most common preference was on printed paper to respond to written questions asking about their food insecurity status, followed by speaking with a nurse. The survey asked whether the participant was on SNAP/CalFresh. Among those who said they were not on SNAP/CalFresh and were identified as food insecure, 22.7% reported they did not know how to apply for SNAP/CalFresh, 35.6% reported not being eligible, and 21.6% reported they did not want to be dependent on the government.

Perceived Experience at the Clinic

One-third of the survey participants reported being asked by staff if they have enough to eat. Nearly 30% of the entire sample reported that staff recommended SNAP/CalFresh, but only 20.0% reported they enrolled due to a staff referral. Participants who were food insecure reported lower odds of having been asked by staff if they have enough to eat (OR 0.72, 95% CI 0.55, 0.95), but higher odds of enrolling in SNAP/CalFresh due to the staff referral (OR 1.89, 95% CI 1.33, 2.69).

Qualitative Results

Emergent themes and subthemes for food insecurity screening agencies are summarized in Table 4. Table 5 contains salient quotes for each of the key themes related to food insecurity screening.

Food Insecurity Screening Process

Before participating in the SNAP-Ed program for 3 of the agencies, the screening process was not systematic, and clinical staff at most agencies inquired about patients' food on an *ad hoc* basis. Most of them reported using the Hunger Vital Sign 2-item tool.[22] Interviewees generally perceived the Hunger Vital Sign to be a useful tool, but some clinics adapted it or merged it into 1 question. Clinics that integrated the screening tool into their Electronic Health Record were most enthusiastic about the process.

Although the process was not standardized across the health clinics, a typical pathway might involve the following 3 stages once a patient screens positive. First, the patient is given a packet of information describing food insecurity, the impact it has on health, and what local resources are available. Second, the patient is provided with a referral to the clinic's Registered Dietitian (RD) or health educator for further support. Last, the RD conducts an assessment on their eligibility for SNAP, and then refers the patients to other resources, such as social workers and food pantries.

Table 2. Survey Population Characteristics, Fall 2018, Los Angeles County (n = 1,013)

Characteristic	Number (Percentage or Mean)
Male	234 (23.9%)
Female	745 (76.1%)
Average age	42.8 (Range 18 to 95)
English language survey	549 (54.2%)
Spanish language survey	464 (45.8%)
Race/ethnicity[a]	
Latino	759 (74.9%)
African American	151 (14.9%)
White	53 (5.2%)
Asian	41 (4.1%)
American Indian	10 (1.0%)
Other	25 (2.5%)
Education	
<High school	338 (35.0%)
High school degree	279 (28.9%)
Some college	177 (18.3%)
Associate of art or technical degree	76 (7.9%)
Bachelor's degree	65 (6.7%)
Some graduate school or degree	32 (3.3%)
Average number of children <18 at home	1.5 (Range 0 to 11)
Has at least 1 child at home	69.3%
Participate in CalFresh (food stamps, EBT, SNAP)	264 (26.4%)
Participate in (all that apply)	
WIC	219 (21.6%)
CFAP	82 (8.1%)
CalWORKS	95 (9.4%)
General relief	35 (3.5%)
CACFP	2 (0.2%)
Head Start	14 (1.4%)
Medi-Cal	633 (62.5%)
HFP-CHIP	23 (2.3%)
Reduced price school meal	54 (5.3%)
Section 8 housing	54 (5.3%)
Summer food program	8 (0.8%)
SSI	65 (6.4%)
None of the above	208 (20.5%)
In past 12 months, frequency to worry that food would run out	
Often	162 (16.0%)
Sometimes	453 (44.7%)
Never	398 (39.4%)
In past 12 months, food did not last and did not have money to get more	
Often	118 (11.6%)
Sometimes	417 (41.2%)
Never	478 (47.2%)

[a]Question allowed participant to make all that apply; total may sum to more than 100%.
Abbreviations: CFAP, California Food Assistance Program; CACFP, Child and Adult Care Food Program; CalWORKS, California Work Opportunity and Responsibility for Kids program; EBT, Electronic Benefit Transfer; HFP-CHIP, Healthy Families Program-Children's Health Insurance Program; SNAP, Supplemental Nutrition Assistance Program; SSI, Supplemental Security Income; WIC, Special Supplemental Nutrition Program for Women, Infants, and Children.

Table 3. Survey Responses by Food Insecurity Status, Intercept Survey at Four Public and Nonprofit Clinics in Los Angeles County, Fall 2018 (n = 1,013)

	All (n = 1013)	Not food insecure (n = 362)	Food insecure (n = 626)	Odds ratio (95% CI)*	*P*
Clinics should help me find food (strongly agree or agree)	84.6%	79.4%	87.3%	1.78 (1.26, 2.53)	<0.0001
With whom most comfortable sharing personal information about not having enough to eat:					
Doctor	45.3%	35.6%	51.0%	1.88 (1.44, 2.45)	<0.0001
Nurse	15.6%	11.6%	17.9%	1.66 (1.13, 2.43)	0.009
Front desk staff	4.5%	2.5%	5.6%	2.32 (1.10, 4.89)	0.026
On paper	21.2%	15.2%	24.6%	1.82 (1.30, 2.56)	<0.0001
On a computer or tablet	10.3%	7.7%	11.8%	1.60 (1.01, 2.52)	0.040
Currently participate in SNAP	26.7%	19.3%	31.0%	1.88 (1.38, 2.58)	<0.0001
If not currently enrolled in SNAP, why:					
Don't know how to apply	18.7%	12.8%	22.7%	2.00 (1.33, 3.02)	<0.0001
Am not eligible	37.4%	40.1%	35.6%	0.82 (0.61, 1.12)	0.218
Don't want to be dependent on government	25.3%	30.8%	21.6%	0.62 (0.44, 0.87)	0.005
Application too difficult	2.8%	2.6%	2.7%	0.93 (0.37, 2.34)	0.875
Concerned what others will think	1.7%	2.1%	1.4%	0.67 (0.21, 2.11)	0.495
Worried about citizenship	6.4%	3.5%	8.4%	2.57 (1.25, 5.26)	0.010
Applied and waiting	2.1%	2.1%	2.1%	1.02 (0.36, 2.88)	0.920
Other reason	10.5%	10.7%	10.3%	0.96 (0.59, 1.55)	0.880
Staff ever asked if client has enough to eat (yes)	33.8%	38.4%	31.0%	0.72 (0.55, 0.95)	0.020
Staff recommended SNAP	28.8%	28.6%	28.9%	1.01 (0.76, 1.35)	0.937
Enrolled in SNAP due to staff referral	20.0%	14.0%	23.6%	1.89 (1.33, 2.69)	<0.0001

*Food insecure compared to not food insecure (reference).
Note: For the Hunger Vital Sign 2-item screener, 25 (2.5%) participants did not answer both questions.
Abbreviations: CI, Confidence Interval; SNAP, Supplemental Nutrition Assistance Program.

Warm hand-offs occur when 1 provider introduces, in person, the patient to the provider to whom they are referred to address their problems. At the participating clinics, warm hand-offs to other county departments and follow-up did not seem to be the norm. Factors that can undermine the feasibility of the screening process include insufficient staff to cover all stages of the screening and referral pathways.

Workforce

Interviewees talked about the need to have a sufficiently large workforce to support activities at each point in the screening process and referral pathways. As clinics learn to screen consistently and to identify food insecure patients, they need to have enough employees to implement steps including transferring the patients in person from 1 care team member to another.

Barriers

Barriers to implementation of the food insecurity screener occurred at 3 levels: patient, organization, and system. These levels were not embedded in the interview protocol but emerged from the data. Perceived patient-specific challenges included stigma of poverty, low literacy, difficulty filling out forms, difficulty navigating systems of care, and multiple competing problems, such as housing instability, job insecurity, and transportation issues. Organizational barriers included staff turnover, challenges with staff role definition, challenges establishing the screening and referral workflows, competing programs, and insufficient training on screening tools. At the system level, some interviewees reported delays in getting other County departments to co-locate staff at clinics and providing confusing information on SNAP eligibility.

Facilitators

All interviewees discussed factors that contributed to the success of their efforts. They included capacity building opportunities such as empathy training, a motivated workforce, team-based workflows,

Table 4. Summary Descriptions of the Main Themes From Interviews With Food Insecurity Screening Partnering Agencies

Theme/Summary Description
Screening process
Refers to the process of screening patients in primary care settings to identify those who are food insecure and refer them to food programs (eg, SNAP) and other food resources, such as food banks. Sub-themes include screening tools and perceived tool utility, data tracking, identification of referral resources, referral protocol, warm hand-off protocol, and follow-up.
Workforce
Refers to the profile of individuals who work for the participating agencies, such as status (full-time, part-time, or volunteer status), expertise, prior experience with food-insecure populations, type of training received under SNAP-Ed grant, and perceived training quality.
Barriers
Refers to perceived obstacles in the food insecurity screening process. Sub-themes include perceived population-level barriers (eg, literacy, fear of immigration raids), organization-level barriers (eg, competing goals within each clinic), and system-level barriers (eg, lack of formal arrangements with other county agencies).
Facilitators
Refers to factors that are perceived to make the screening processes easier, including collaborations and regional coalitions, local knowledge, community trust, and having food resources (eg, farmers' markets) at clinic sites.
Impact
Refers to the perceived outcome of agency efforts in low-income communities. Subthemes include outcomes measurement and anecdotal evidence.
Sustainability
Refers to discussions of resources needed to ensure that current efforts are sustainable and scalable in the long-term.

colocation of other agencies' enrollment workers, leadership support, and on-site resources such as wellness centers and farmers' markets. The latter factor emerged as a distinctly strong facilitator, with most interviewees noting that it allows clinic staff to offer food insecure patients something tangible on the day of the visit.

Impact

Some interviewees discussed how introducing a food insecurity screening in the clinic has had an impact on staff awareness about the issue, as well the ways they provide care to their patients. Interviewees commented on a shift to a holistic approach to care, whereby providers try to understand the context of life for their patients and their families. Many interviewees also saw value in data monitoring. Data that was being tracked included population needs, screening rates, the percentage of patients for whom the provider has documented an intervention, patient satisfaction, successful linkage to food services, and other clinical outcomes (body mass index and labs).

Sustainability

All interviewees discussed the resources they needed to ensure their screening and referral pathways could be sustained in the long-term. They raised the issue of insufficient institutional capacity to follow up on patients who are food insecure, who needed case management, warm hand-offs, postreferral follow ups, and referrals to other resources.

Discussion

This study draws on a multi-method analysis to examine food insecurity at individual, organizational, and system levels. Findings suggest that health clinics and health systems can and should address food insecurity in the United States (US).[10–13] Prior studies found that screening patients for food insecurity and referrals to relevant support resources can help ameliorate this public health problem.[14–17] However, practical aspects of the design and implementation of screening and referral pathways at the organizational, county or municipal level can either undermine or boost the success of these screening programs. Our findings add to the knowledge base on barriers and facilitators to food insecurity screening for public program administrators and clinical leaders of programs aimed at reducing food insecurity. Given the financial consequences of the COVID-19 pandemic, screening programs will continue to play an important role in helping households access healthy food.

Table 5. Salient Quotes for Themes That Emerged From Interviews With Food Insecurity Screening Partnering Agencies

Theme/Quote
Screening process
I think the two questions are a great tool to open discussion and to stimulate the thought with the parents, and to kind of de-mystify or destigmatize the idea of food insecurity, because a lot of our parents, you know, obviously don't want to admit being food insecure, but when you bring it up in the form of a question, it gives validity to the issue, and lack of judgment, so I think it's a perfect way to kind of set the table. (Agency 3, Participant 1)
We were identifying all the determinants especially for food, and then we never knew what was happening. That's when we realized we really needed to connect someone here with us, track it, follow up, see did they get food recourses, did they go, was that helpful to them—that's how we discovered some of the food banks weren't so helpful, others were too far. We're looking to see what else we could do. (Agency 5)
Workforce
A [nutritionist or social worker] can be self-sustained through the billing process because they no longer have to see the provider for this. . .and the service would be a billable service. The clinic has such high needs for all kinds of things, but [food access and insecurity counseling] is not a billable service, so it is not sustainable. (Agency 1, Participant 1)
There hasn't been a whole lot of training. The staff that are actually involved in the food insecurity screening right now. . .haven't done much training. It was more, "This is what we're doing now. This is what we need you to do. Here are the questions." And we gave them the information on food insecurity and really briefly sort of talked about why it's important. (Agency 4)
Population-level barriers
I remember this one patient told me that, right now they're gonna start getting housing, and once they get housing, they'll be able to focus more on the food. (Agency 2, Participant 1)
We'll give the resource, we'll give the people, we'll do this, and then families are coming back and saying it's not enough or they weren't able to access, they forgot to call, or they lost the paper. (Agency 3, Participant 2)"
Organizational barriers
Taking patients from the PEDS clinic to the medical office, I don't encourage that at all because not every patient will receive the same-day service. Because sometimes health education staff are busy in the classroom or clinic doing their presentation. What I will recommend is that the clinic staff keep a log of all of them, pass it to the social worker, and they make appointments or follow-up calls to them to make sure that they receive services that they need. (Agency 4)
I think what's needed now is the actual follow-through part, making sure we have enough social workers and staff in our family support programs and case management built up to be able to handle when those screens are positive. That's the real crux of the sustainability. (Agency 3, Participant 2)
System-level barriers
Focus groups around CalFresh [SNAP] enrollment actually got a little ugly, because [patients] had poor experiences unfortunately. Our team had to contact a few attorneys just to figure out, okay, what is the language, what does this mean? Because some of the information is a little confusing to participants or there's a lot of different information out there. (Agency 2, Participant 3)
Facilitators
The mission and the heart of the people that are running the program. And I would say that's pretty much core to everything that we do. Everything we do is very mission driven for us. I think that part is probably the number one factor that has aided us in the success. It's that willingness to do it because you recognize it's important, you see it in the data, and you see your population suffering, and it's the right thing to do. (Agency 3, Participant 2)
We had a presentation showing why we do this work and why it's important to screen patients for food insecurity, and we've shared stories from our patients in the community and how we've helped them out. I think them hearing this coming from our own patients has really motivated them to see the big picture. Really, the support from the clinic administrators who are there with their staff and have really pushed them to be empathetic and make sure we're screening the patients. A lot of staff and providers didn't know what food insecurity was. Having a patient come in and share their story really impacted our staff and made them want to work with us. (Agency 2, Participant 3)
Impact
It's an entirely different way of approaching primary care. It's about a whole new model of forming relationships, really getting to know what's going on in the lives of your patients and what are the true barriers to their health, and forming that pyramid of needs, and addressing them in the order of the highest priority. I'm not saying we're there by the way, that sounds wonderful, it's a vision. [. . .] I don't think that screening for food insecurity in isolation is how we've been successful. It's the entire approach we've taken, and food insecurity is one domain in 7 or 8 that we look at for our patients. (Agency 5)
We have families that have come in and thank us for caring and asking those questions because there's embarrassment, there's pride, and parents will not think first to come to a healthcare institution to report things like, "I'm hungry." And it's been a really neat thing that, for me, at least as a provider and a pediatrician, that families will come to me and talk to me about things that people may not ordinarily put in the healthcare bucket. And it's a neat place that people are recognizing that it very much can be in the healthcare bucket because it very much impacts your health, your growth, and everything. So, that's been, I think, a very big win for us. (Agency 3, Participant 2)

Continued

Table 5. Continued

Theme/Quote
Sustainability
I think we're constantly working on it and trying to see what points in the workflow need to be improved. So, I think sort of trying to figure out how to implement this, has been a really good example of how our departments can work together. And even though [another county agency] was in the building, we never really worked with them or knew what they do, or they didn't know what we did, we didn't know how they worked, they didn't know how we worked. And, so, I think that sort of collaboration is helpful both for this and potentially for more projects in the future. (Agency 4)

The survey and interview findings revealed missed opportunities in the clinic setting to help patients enroll in food assistance services or even to provide food on site. First, as other research has shown, many patients would like to seek assistance in the clinic setting,[31] but many surveyed had not been prompted to discuss their concerns about food security in the clinic. The clinics included in the study had worked on implementing food insecurity screening for at least 1 year, which may indicate the difficulty with scaling a screening program and referral pathway. Suggestions from the in-depth interviews also noted that medical assistants occasionally forgot to administer the screening, indicating that workflows may not have been clearly established or did not account for the time it takes to administer the questions. While patients mostly said they would prefer to discuss food issues with their doctor, in the busy clinic setting, this issue may not be a priority during a doctor-patient encounter. Conveying concerns about insufficient food on printed paper (such as a pre-examination questionnaire) was the second most preferred method. A positive screen on printed paper allowed for nonmedical staff to identify the need and to initiate follow-up services during the clinic encounter.

Although some of the clinics were already engaged in clinic promotion of food resources, the efforts did not seem to be comprehensive or consistent. Clinics might consider distributing food vouchers that can be redeemed at local grocery stores or even conducting on-site food distributions. Moreover, clinics have other opportunities to share information about services, including using text messages or e-mails to alert patients to food distribution events and food pantries in their local area.

The qualitative themes identified key barriers that are consistent with the recent National Academies report that highlighted the importance of having a trained and appropriately staffed workforce and concerns surrounding data and standards,[32] especially as they relate to social risk screening and addressing patients' social needs. Specifically, findings from the current study revealed competing demands on clinic resources,[33] the complexity of establishing referral pathways,[34] and some residual doubts about the utility and effectiveness of the Hunger Vital Sign screener.[35] While the 2-item Hunger Vital Sign screener reduces patient and clinic burden, this screener may be less reliable compared with the 6- or 18-item tools.[36] Research highlights the need to allow health clinics sufficient flexibility to tailor existing instruments to local needs or even develop their own to ensure that the tool is integrated into existing electronic health record domains.[13] However, such recommendations may contradict best practice from the field of survey development, which typically recommends rigorous psychometric testing and standardized implementation of surveys across institutions.[37] Other research has also highlighted the lack of consensus on how and how often to screen patients for social needs, and by whom.[38] Future research should examine these issues.

Our findings, as well as those of previous studies, suggest that routinely integrating food insecurity screening in clinical settings requires additional infrastructure, staff training, and a stronger evidence base to increase provider buy-in.[13] Given the likely variation in staffing and resources across settings, prior research indicates that more flexibility is needed to adapt workflows to suit staffing levels and resources.[15] Experience in the field also shows that stronger warm hand-off procedures may be needed to connect patients with the proper resources, as breakdowns after systematic screening likely occur quite often.

Limitations

The convenience survey sample may have omitted vulnerable persons who were not at the clinics on

the day(s) scheduled for the intercept survey, limiting generalizability of the data. The relatively small sample size of the qualitative component hinders the broader interpretation of our findings. Our interviewees come from a large multicultural, multiracial, mostly urban county in southern California, so they may not be representative of experiences across the state or the US. Finally, self-selection bias represents another possible limitation since 1 of the originally eligible partnering agencies did not participate.

Conclusions

Addressing food insecurity in the US is a pressing public health need that was exacerbated by the COVID-19 pandemic. This study identified several challenges of screening and building referral systems for patients. Food pantries and food distribution events directly on-site may offer an immediate solution to meet the needs of food insecure patients. Local public health departments can work to initiate and strengthen county-level referral infrastructure which could be critical for ensuring that effective screening and referral systems are implemented in a standardized manner. Training support and capacity building opportunities such as empathy trainings, offered in partnership with public health departments, should be provided on an ongoing basis to keep clinic staff updated on best practices and as a strategy for addressing potential staff turnover, which frequently can lead to loss of institutional memory/knowledge. Training can also ensure that screening tools are being implemented as intended and that connectivity to federal and local resources, including SNAP, is established in a timely manner. Finally, county-level administrative and management support is crucial for capacity and coalition building. Health clinics and stakeholders should collaborate at a systems level and exchange best practices to help further address this need.

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