

Measuring Patients' Basic Resource Needs: The Role of a Small Survey to Guide Operational Decisions

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ABSTRACT

Introduction: Increasingly, health care systems use systematic surveys of their patients to identify basic resource needs such as food insecurity. Surveys of small patient samples can help these systems improve existing instruments and explore new measures.

Methods: In response to operational concerns with an existing food insecurity measure, we surveyed 110 older adult members (60% response rate) from Kaiser Permanente Colorado (KPCO); 96 (87%) of these individuals completed a 3-month follow-up survey. The survey compared measures of food insecurity, assessed coexisting basic resource needs, explored trade-offs between those needs, assessed changes over time, and described the use of community food resources.

Results: A well-validated, 2-item food insecurity measure had fewer false-positive responses than a previously used single-item measure. Individuals with food insecurity commonly reported concurrent difficulties paying for housing, transportation, utilities, and cost-related medication nonadherence. These basic resource needs persisted during a 3-month period. Participants commonly reported reciprocal trade-offs in paying for basic resource needs; 47.4% had delayed paying for food to pay for housing, and 22.0% had delayed paying for housing to pay for food ($p < 0.001$). Although 51.8% of participants reported receiving assistance from KPCO in obtaining food and 25.5% reported assistance with medical costs, fewer than 5% received assistance with other basic resource needs.

Conclusion: This survey informed operational decisions about measure selection and survey timing, and helped leaders and researchers understand the relationships among basic resource needs. Such surveys can help learning health systems improve their capacity to assess these fundamental human needs.

INTRODUCTION

Patients in clinical practice often have basic resource needs such as food insecurity, inadequate housing, or financial resource strain. These needs are associated with adverse health outcomes¹⁻³ and are potentially modifiable through interventions within health care systems.⁴⁻⁶ To identify basic resource needs systematically, health care systems can conduct screening surveys of their entire patient population or focused surveys in high-risk subgroups.⁷ As systems gain experience with these survey instruments, they may identify problems such as excessive

length, ambiguous wording, omission of important topics, or items that do not produce actionable information. Although operational leaders can unilaterally make changes in the survey to address these problems, a specifically designed survey administered to a small number of patients provides a more rigorous approach to continuous improvement.

Since 2012, older adult members of Kaiser Permanente (KP) Colorado (KPCO) have been offered a survey, the Medicare Total Health Assessment (MTHA), as part of Medicare Annual Wellness Visits.⁸ This survey included a single item

that assessed food insecurity.⁹ Between January 2012 and December 2015, a total of 50,097 KPCO members aged 65 years or older (39% of all older adult members) completed the MTHA, of whom 5.7% reported food insecurity.¹⁰ When KPCO staff followed-up with patients who reported food insecurity on the MTHA survey, many members indicated that they had never had food insecurity, and had no other basic resource needs. Staff members and operational leaders concluded that the single MTHA food insecurity item had a high rate of false-positive responses.

As part of a quality improvement initiative, operational leaders collaborated with KPCO researchers to design and to conduct a small survey that would assess alternative measures of food insecurity for the MTHA. The survey also addressed operational questions about the coexistence of food insecurity with other basic resource needs, changes in basic resource needs over time, and outreach by KPCO to members with food insecurity. Researchers also used this opportunity to pilot test more extensive measures of basic resource needs that might be useful in subsequent studies² and to develop new questions that assessed trade-offs among basic resource needs. Consistent with the principles of a learning health system,¹¹ the survey was designed to provide information that was sufficiently accurate and timely to inform operational decisions, even if it was too small to answer these questions conclusively. This article reports the findings of this small survey and discusses how these findings affected subsequent decisions.

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METHODS

Study Setting

In 2016, KPCO provided health insurance and clinical care to approximately 120,000 members aged 65 years and older, of whom 86.0% received insurance coverage through the Medicare Part C (Medicare Advantage) program, 2.5% had dual Medicare and Medicaid coverage, and 11.5% had a private insurance plan or received traditional Medicare benefits. When basic resource needs were identified during a clinic visit or through screening, KPCO community specialists, social workers, nurse care managers, and registered dietitians helped connect older adult members to social services in the community.^{12,13} This project was approved by the KPCO institutional review board.

Participants

We identified all KPCO members who completed the MTHA between September 1, 2016, and December 31, 2016. We have previously described the content and administration of the MTHA survey and the characteristics of survey respondents.¹⁰ For the current survey, members were eligible if they 1) reported food insecurity

using the single item on the MTHA⁹; 2) resided in the Denver-Boulder, CO, metropolitan area; 3) were age 65 years or older on September 1, 2016; 4) spoke English as their first language; 5) had not previously opted out of research; and 6) lived independently (vs in a skilled nursing facility or hospice) at the time of recruitment.

Assessment of Food Insecurity in Clinical Practice

The single-item measure of food insecurity in the MTHA was derived from the Nutrition Screening Initiative checklist, a 10-item set of questions about nutritional issues in the elderly.⁹ The food insecurity item in this measure had not been independently validated, and the decision to include it in the MTHA was made in 2011, before the use of other brief measures of food insecurity became widespread.

The gold standard for assessment of food insecurity is an 18-item survey developed by the US Department of Agriculture (USDA) that is administered annually to assess food insecurity in the US.¹⁴ Six-item¹⁵ and 2-item¹⁶ screening measures that use a subset of USDA items have

been developed for clinical and research use, and have been validated through comparison with the 18-item measure. The 2-item measure, referred to as the Hunger Vital Sign, has rapidly gained acceptance in clinical settings,¹⁷ even though brief measures of food insecurity demonstrate lower specificity (ie, a higher false-positive rate) than the 18-item survey.¹⁸ The 1, 2, and 6-item food insecurity measures are described in Table 1.

Survey Design and Measures

We designed baseline and 3-month follow-up surveys to address questions of operational and research importance including: 1) the prevalence of food insecurity using the 2-item and 6-item measures (Table 1); 2) the prevalence of other basic resource needs (housing, transportation, utilities, and medication costs) in members with food insecurity; 3) the stability of basic resource needs during the 3-month interval between surveys; 4) assistance from KPCO or other sources in meeting basic resource needs; and 5) trade-offs between paying for competing basic resources. These surveys included items from existing KP

Table 1. Short measures of food insecurity^a

Measure and references	Number of items	Wording of items (response options)	Responses indicating food insecurity
Medicare Total Health Assessment (MTHA) ^{a,9,10}	1	"Do you always have enough money to buy the food you need?" (Yes/No)	No
Hunger Vital Sign ^{b,c,16}	2	"Within the past 12 months, we worried whether our food would run out before we got money to buy more." (Often true, Sometimes true, Never true) "Within the past 12 months, the food we bought just didn't last and we didn't have enough money to get more." (Often true, Sometimes true, Never true)	Often or sometimes true to either statement
USDA short form ^{b,c,15}	6	"In the past 12 months, did you or other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food?" (Yes/No) If answered yes to previous question: "How often did this happen?" (Almost every month, Some months but not every month, In only 1 or 2 months) "In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money to buy food?" (Yes/No) "In the last 12 months, were you ever hungry but didn't eat because you couldn't afford enough food?" (Yes/No) "The food we bought just didn't last, and we didn't have money to get more." (Often true, Sometimes true, Never true) "We couldn't afford to eat balanced meals." (Often true, Sometimes true, Never true)	≥ 2 affirmative responses

^a The MTHA was developed and is in use in Kaiser Permanente. The single food insecurity survey item is derived from the Nutrition Screening Initiative checklist for nutrition assessment in older adults.⁹

^b The time frame for recall varies from 3 to 12 months in different settings. The survey reported here used a 3-month time frame to assess changes during the 3 months between baseline and follow-up surveys. The time frame described here is from the references cited.

^c The Hunger Vital Sign and USDA 6-item short form both use items derived from an 18-item USDA survey, the Household Food Security Scale.¹⁴ USDA = US Department of Agriculture.

surveys, previously validated items from the literature, and newly developed items. The domains and item sources are shown in Table 2 (available online at: www.thepermanentejournal.org/files/2018/18-098-T2.pdf). The final surveys are available on request.

On our baseline survey, we assessed the prevalence of food insecurity using the Hunger Vital Sign. Although we did not repeat the MTHA food insecurity item, we believed that the time gap between the MTHA and our survey was sufficiently short that individuals who did not report food insecurity on the Hunger Vital Sign were likely to represent false-positive responses to the original MTHA. On the follow-up survey, we repeated the Hunger Vital Sign to assess changes since baseline and added the 6-item USDA survey to compare with the Hunger Vital Sign and to assess its association with other basic resource needs. Although prior studies typically used a 12-month recall period,^{15,16} we chose a 3-month recall period for all measures to reflect the time between baseline and follow-up surveys.

At baseline, we also collected sociodemographic information, including age, sex, race/ethnicity, marital status, education, living situation, employment, household income, and caregiver of a child younger than age 18 years. Furthermore, we assessed health status using the Patient-Reported Outcomes Measurement Information System (PROMIS) measures of general health and quality of life,¹⁹ a measure of social isolation,²⁰ and the 2-item Patient Health Care Questionnaire (PHQ-2) depression scale,²¹ as well as information about health behaviors, specifically tobacco use, alcohol use, and illegal drug use. We included a question from another KP instrument, the Your Current Life Situation Survey, that inquired about difficulty paying for 6 basic resources (food, housing, utility bills, child care, medical needs, and debts).^{7,22} We also asked more detailed questions about housing concerns (4 items) and transportation barriers (5 items) from the Your Current Life Situation Survey, and we included a 4-item measure of cost-related medication nonadherence.²³

The primary purpose of the follow-up survey was to assess changes in basic

resource needs during the 3 months since the baseline survey. We also included more extensive measures of housing, transportation, and energy expenses from prior research and a slightly different measure of cost-related medication nonadherence, to explore their utility for subsequent research.² To assess trade-offs between food insecurity and other basic resource needs, we developed 3 new pairs of questions with the general form: "How often did you put off paying for food in order to pay for (housing, transportation, medical costs?)" and "How often did you put off paying for (housing, transportation, medical costs) in order to pay for food?" Response options were never, rarely, sometimes, or often. These questions allowed us to assess whether members consistently prioritized paying for one resource need over another or whether they juggled their financial demands by paying for different basic resources at different times.^{24,25} Although we did not solicit open-ended responses, we recorded any written comments on paper surveys or verbal comments on telephone surveys to gain a narrative perspective on the needs of the respondents.

We conducted cognitive interviews to assess the wording, comprehension, response sets, and functionality of the initial version of the baseline survey and recruitment materials.²⁶ These cognitive interviews lasted approximately 45 minutes. We recruited 10 KP members (5 who reported food insecurity and 5 who did not) from a sample of 50 adults aged 65 years and older who had completed the MTHA earlier in 2016. After members gave informed consent, 2 trained staff conducted an in-person interview with each member. The interviewers completed field notes and analyzed recordings using qualitative methods (content analyses and identification of themes). On the basis of results of these interviews, we revised the baseline survey. Participants in the cognitive interviews were not included in the final survey sample.

Survey Administration

Between September 1, 2016, and December 31, 2016, a total of 210 KP members reported food insecurity on the MTHA. Of these individuals, 4 (1.9%) had opted out of research and 19 (9.0%)

were not living independently. Of the remaining 187 individuals, 6 lived in the same household as another eligible member. We randomly excluded 3 of these individuals (1.4%), resulting in a final sample of 184 (87.6% of the total). These individuals received a mailed survey packet, between December 2016 and June 2017, that included a \$20 gift card. Members could opt out of the survey by calling or sending an email to study staff. Participants could return the survey by prepaid mail or could request telephone administration. Individuals who neither responded nor opted out were contacted by project staff, who administered the survey by phone to those who gave verbal consent. The baseline survey was completed a mean of 120 days (standard deviation = 38 days, range = 46-221 days) after the member reported food insecurity on the MTHA. Members who completed the baseline survey received a follow-up survey 3 months later, with a second \$20 gift card.

Statistical Analysis

Questions about assistance from KP and other organizations with basic resource needs other than food had 7% to 15% missing responses, but missing responses were below 5% for other items. We compared characteristics and survey responses between participants who reported food insecurity at baseline on the 2-item Hunger Vital Sign and those who did not using *t*-tests for normally distributed continuous variables, Wilcoxon rank tests for nonnormally distributed continuous variables, and χ^2 tests or Fisher exact test for categorical variables. McNemar tests for paired data were used to examine changes between baseline and follow-up surveys. We calculated the sensitivity, specificity, positive predictive value, and negative predictive value of the 2-item Hunger Vital Sign compared with the 6-item scale using standard cutoffs for each measure, with exact 95% confidence intervals.¹⁵⁻¹⁷ All analyses were conducted using SAS software version 9.4 (SAS Institute Inc, Cary, NC).

RESULTS

Of the 184 eligible KP members, 110 (59.8%) completed the baseline survey. Of these, 98 (89.1%) completed the

survey by mail and 12 (10.9%) by telephone interview. Ninety-six of these 110 members (87%) completed the follow-up survey, 94 (98%) by mail and 1 each by email or telephone.

Table 3 compares the characteristics of the 81 members (73.6%) who reported food insecurity on the Hunger Vital Sign at baseline with those of the 29 members (26.4%) who did not report food insecurity on the baseline survey but previously reported food insecurity on the MTHA. Members who consistently reported food insecurity had a significantly lower household income, were less likely to be married or living with a partner, reported worse general health or quality of life, and were more likely to feel lonely or isolated than those who were not food insecure.

Measurement of Food Insecurity

On the follow-up survey, 94 respondents completed the 2-item Hunger Vital Sign and the 6-item USDA survey. Forty-six individuals (48.9%) reported food insecurity on both measures, 29 (30.9%) did not report food insecurity on either measure, 19 (20.2%) reported food insecurity on the 2-item but not the 6-item measure, and none reported food insecurity on the 6-item but not the 2-item measure. Compared with the 6-item scale, the sensitivity of the 2-item scale was 100% (95% confidence interval [CI] = 92.3%-100%), negative predictive value was 100% (95% CI = 88.1%-100%), specificity was 60.4% (95% CI, 45.3%-72.2%), and positive predictive value was 70.8% (95% CI = 58.2%-81.4%). The prevalence of other resource

needs was comparable between individuals identified with food insecurity on the 2-item and 6-item measures (data not shown). The prevalence of food insecurity and other basic resource needs did not change significantly between the baseline and 3-month follow-up surveys (Figure 1).

Coexistence of Basic Resource Needs

As shown in Table 3, individuals with food insecurity also reported more difficulty paying for basic resources, housing, and transportation and were more likely to report cost-related medication nonadherence (70.4% vs 20.7%, $p < 0.001$). Table 4 extends this finding by demonstrating that 22% to 47% of members reported putting off paying for a basic resource to pay for another. Only 37 of the 96 participants

Characteristic	Overall (N = 110)	No food insecurity (n = 29, 26.4%)	Food insecurity (n = 81, 73.6%)	p value
Mean age at survey, years (SD)	72.4 (6.3)	73.2 (7.6)	72.1 (5.8)	0.83
Female sex	78 (70.9)	17 (58.6)	61 (75.3)	0.09
Race/ethnicity				
Hispanic/Latino	16 (14.5)	3 (10.3)	13 (16.0)	0.19
White	66 (60.0)	22 (75.9)	44 (54.3)	
Black	13 (11.8)	1 (3.4)	12 (14.8)	
Other	15 (13.6)	3 (10.3)	12 (14.8)	
Education				
Less than high school graduate	15 (13.6)	3 (10.3)	12 (14.8)	0.47
High school graduate or GED	30 (27.3)	7 (24.1)	23 (28.4)	
Some college or 2-year degree	42 (38.2)	10 (34.5)	32 (39.5)	
College graduate or higher	23 (20.9)	9 (31.0)	14 (17.3)	
Living situation				
Independently	68 (61.8)	22 (75.9)	46 (56.8)	0.11
With relative or friend	29 (26.4)	7 (24.1)	22 (27.2)	
Senior, retirement, or assisted living	8 (7.3)	0 (0)	8 (9.9)	
Other	5 (4.5)	0 (0)	5 (6.2)	
Marital status (living with spouse or partner)	33 (30.0)	16 (55.2)	17 (21.0)	0.001
Employment				
Working	12 (10.9)	1 (3.4)	11 (13.6)	0.15
Retired	73 (66.4)	24 (82.8)	49 (60.5)	
Disabled	23 (20.9)	4 (13.8)	19 (23.5)	
Other	2 (1.8)	0 (0)	2 (2.5)	
Household income per year, US dollars				
< 14,999	46 (41.8)	3 (10.3)	43 (53.1)	< 0.001
15,000-24,999	30 (27.3)	7 (24.1)	23 (28.4)	
25,000-49,999	23 (20.9)	13 (44.8)	10 (12.3)	
≥ 50,000	4 (3.6)	3 (10.3)	1 (1.2)	
Missing/prefer not to answer	7 (6.4)	3 (10.3)	4 (4.9)	
Primary caregiver of child < 18 years of age	5 (4.9)	0 (0)	5 (6.8)	0.15

(table continued on next page)

who responded to these items (38.5%) reported that they never made such trade-offs. Members were significantly more likely to put off paying for food to pay for housing or utilities than they were to put off paying for those resources to pay for food ($p < 0.001$). They were equally likely to put off paying for food and medical needs ($p = 0.39$).

Organizational Follow-up for Basic Resource Needs

Among all 110 baseline respondents, 52% indicated that KP had contacted them to offer food assistance through referral to community organizations and 29% reported assistance from other sources (Table 5). Approximately 25% reported that KPCO had offered assistance

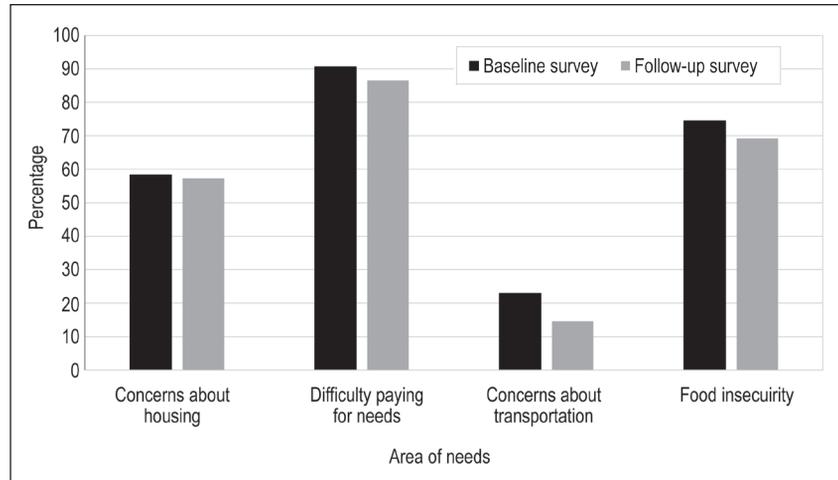


Figure 1. Self-reported basic resource needs at baseline (N = 110) and 3-month follow-up (N = 96) among older adult members of Kaiser Permanente Colorado.^a

^a Food insecurity was assessed using the 2-item Hunger Vital Sign.¹⁷ No differences were statistically significant.

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Characteristic	Overall (N = 110)	No food insecurity (n = 29, 26.4%)	Food insecurity (n = 81, 73.6%)	p value
Insurance at survey				
Medicaid (standard or SNP)	30 (27.3)	3 (10.3)	27 (33.3)	0.02
Medicare or commercial	80 (72.7)	26 (89.7)	54 (66.7)	
Health status				
General health (excellent or very good)	29 (26.4)	12 (41.4)	17 (21.0)	0.05
Quality of life (excellent or very good)	26 (23.6)	14 (48.3)	12 (14.8)	0.001
Physical health (excellent or very good)	24 (22.0)	12 (41.4)	12 (15.0)	0.002
Mental health (excellent or very good)	48 (43.6)	17 (58.6)	31 (38.3)	0.09
Feel lonely or isolated (sometimes, often, or always)	55 (50.0)	9 (31.0)	46 (56.8)	0.02
Have someone to call for help	102 (92.7)	28 (96.6)	74 (91.4)	0.36
Depression (on PHQ-2)	22 (20.4)	3 (10.7)	19 (23.8)	0.14
Tobacco use				
Current	19 (17.3)	5 (17.2)	14 (17.3)	0.19
Quit	50 (45.5)	17 (58.6)	33 (40.7)	
Never	41 (37.3)	7 (24.1)	34 (42.0)	
Alcohol and substance use				
Never	73 (66.4)	15 (51.7)	58 (71.6)	0.07
Moderate	32 (29.1)	11 (37.9)	21 (25.9)	
Heavy	5 (4.5)	3 (10.3)	2 (2.5)	
Never use illegal drugs	104 (94.5)	28 (96.6)	76 (93.8)	0.58
Difficulty paying for basic resources (6 items)				
Mean no. of concerns (SD)	3.37 (1.63)	2.17 (2.00)	3.80 (1.23)	< 0.001
≥ 1 concern	98 (89.1)	19 (65.5)	79 (97.5)	< 0.001
Housing (4 items)				
Mean no. of concerns (SD)	1.13 (1.21)	0.48 (0.83)	1.36 (1.24)	< 0.001
≥ 1 concern	64 (58.2)	9 (31.0)	55 (67.9)	0.001
Transportation (5 items)				
Mean no. of concerns (SD)	0.64 (1.42)	0.17 (0.93)	0.80 (1.53)	0.008
≥ 1 concern	24 (21.8)	1 (3.4)	23 (28.4)	0.005
Medication adherence				
Cost-related nonadherence, 4 items	63 (57.3)	6 (20.7)	57 (70.4)	< 0.001

^a Respondents were defined as having food insecurity if they responded "sometimes, often, or very often" to either question in the 2-item Hunger Vital Sign¹⁶ on the baseline survey.

Data are number (percentage) unless otherwise indicated.

GED = General Equivalency Diploma; PHQ-2 = Patient Health Questionnaire-2²¹; SD = standard deviation; SNP = Special Needs Program.

with medical costs, but less than 5% reported assistance with other basic resource needs. At follow-up, the proportion of participants reporting contact was generally lower, although only the declines in contacts from KP for food assistance ($p = 0.01$ vs baseline) and contacts from others for housing assistance ($p = 0.02$ vs baseline) were statistically significant.

The Sidebar: Open-Ended Comments on Food Insecurity Surveys provides spontaneous comments from written surveys or telephone interviews that illustrate how participants experienced basic resource needs in the context of their social circumstances and biomedical health concerns.

DISCUSSION

We conducted this survey in a small sample of 110 KPCO members to address pragmatic questions from clinical and operational leaders about the basic resource needs of KPCO members and to develop new methods to assess those needs. Such interactions between organizational leaders and researchers exemplify the work of learning health systems, which requires a compromise between the desire for generalizable knowledge and the need for “directionally correct” information to inform operational decisions and rapid action.¹¹

Before our survey, members who reported food insecurity on the MTHA often failed to confirm this or other basic resource needs when they were offered assistance by KPCO staff. These staff members concluded that many older adults erroneously reported food insecurity using the single-item measure on the MTHA.⁹ Confirming staff concerns, we found that only 74% of participants who initially reported food insecurity on the MTHA later reported food insecurity on our baseline survey. Because a mean of 4 months elapsed between the initial MTHA response and the baseline survey, needs could have changed in the intervening period. We believe this was unlikely, however, because members rarely reported changes in other basic resource needs over that interval (Figure 1), and because individuals who reported food insecurity using the Hunger Vital Sign had substantially higher rates of other basic resource needs than those who did not (Table 3). Operational leaders were dissatisfied with

the prevailing MTHA measure; therefore, they chose to include the 2-item Hunger Vital Sign in a revision of the MTHA because of its brevity and despite its potentially higher false-positive rate than the 6-item USDA measure.

For the 26% of participants who did not report food insecurity on the baseline survey, we compared their other basic resource needs with those of participants who confirmed that they were food insecure. Such resource needs were substantially more common in the latter group (Table 3). This information reaffirmed the need for clinical staff to inquire about other basic resource needs during follow-up and convinced organizational leaders to include questions about other basic resource needs in the revised MTHA.

Because food insecurity was generally identified through the MTHA survey rather than at the point of care, operational leaders wanted to determine whether KPCO staff consistently followed-up with members to assist in addressing

food needs. Only 52% of members who indicated food insecurity on the MTHA reported that KPCO staff had offered such assistance. Although members commonly had other basic resource needs, KPCO staff rarely contacted them to help address those needs (Table 5). Staff outreach may have been unsuccessful in some cases and members may have forgotten earlier conversations with staff, but this finding suggested that periodic tracking and follow-up might help KPCO members connect to community resources.

Once health care systems commit to identifying basic resource needs, they must determine how often to reassess their patients. Frequent assessments are resource-intensive and could be perceived as intrusive or redundant, whereas insufficiently frequent assessments might overlook new, critical needs. Our finding that basic resource needs did not change substantially during a 3-month period (Figure 1) suggested that surveys could be administered at longer intervals.

Open-Ended Comments on Food Insecurity Surveys

“Being cold and sleeping in my car. Paying storage on my household belongings and medical premiums and meds. No family in Denver [and] do not have the money to move.”

“[Housing] not kept clean on consistent basis. Sharing bathrooms, showers, kitchens with male and female roomers. Roach problem. Have small refrigerator but do not want to keep food or drink in my room. Rooming house all I can afford right now.”

“Member does not pay utilities; she lives in a hotel room. She says it’s troublesome not having a microwave or refrigerator. She uses a hot plate to cook or warm things, and her son uses an ice chest to keep things cold and has to keep changing the ice. The cost to rent the hotel room changes every day. She has worried for her safety; there was a shootout and patrons were asked to stay inside their rooms. Member panhandles to make extra money for living expenses and pay for the hotel room and for medication for herself and children [to supplement] Social Security check. All 3 have diabetes.”

“Two great-granddaughters moved in with me because their father has no housing.”

“I am on medical financial assistance from Kaiser [Permanente], and this is a real life-saver. I am so thankful. No problem right now because of this [financial assistance]. Just worried about the future.”

“Member is worried that if the owner decides to sell the property, she won’t be able to afford to move. She has no savings. She cannot afford to pay a deposit and first and last months’ rent.”

“My roommate covers most of the money for food costs in exchange for care I’ve given. I can only work 9 hours a month, or I lose Medicaid. I cohabitate with a friend who was going through chemoradiation, as a caregiver. [If] the situation changes, I will not be able to support myself for food and housing.”

“It is not practical to go to the food bank. The produce is no good; most of it has already turned brown. The cases of grated cheese and yogurt are too much for anybody to consume before it goes bad. They don’t give people the basics.”

Table 4. Tradeoffs between paying for food and other basic resource needs, follow-up survey (N = 96)

Put off paying for food to pay for other need	Percentage	Put off paying for other need to pay for food	Percentage	p value ^a
Put off paying for food to pay for housing	45 (47.4)	Put off paying for housing to pay for food	20 (22.0)	< 0.0001
Put off paying for food to pay for utilities	45 (47.4)	Put off paying for utilities to pay for food	29 (30.5)	0.0009
Put off paying for food to pay for medical needs	34 (36.2)	Put off paying for medical needs to pay for food	30 (31.9)	0.38

^a Exact p values using McNemar test.

Table 5. Self-reported assistance in obtaining basic resources from Kaiser Permanente Colorado and other sources

Resource need ^a	KP ever offered assistance, % ^b			Other sources ever offered assistance, %		
	Baseline (N = 110)	Follow-up (n = 96)	p value ^c	Baseline (N = 110)	Follow-up (n = 96)	p value ^c
Food	51.8	33.7	0.01	29.4	26.6	> 0.99
Housing	4.6	4.8	> 0.99	11.1	1.1	0.02
Utility bills	4.6	3.7	0.69	7.4	1.1	0.06
Medical needs	25.5	25.3	0.82	15.6	10.1	0.46
Debts	2.8	2.4	> 0.99	6.5	1.1	0.06

^a The survey also inquired about KP contacts to help obtain child care; because the need for child care was rare, this question is omitted here.

^b Missing values ranged from 1% to 15% for these items.

^c Exact p values using McNemar tests.

KP = Kaiser Permanente.

The survey also allowed KPCO researchers to test new survey measures. In clinical practice, patients often state that they postpone paying for some resource needs to pay for other needs, but existing studies have focused only on trade-offs between medical costs and other basic resources.^{24,25} We tested pairs of survey questions to determine whether participants made trade-offs between paying for food and housing, utilities, or medical needs. Our finding that this practice was common (Table 4) deserves further study.

Despite the small size of our survey, its findings confirmed prior research. Others have found that the Hunger Vital sign had a high sensitivity and moderate specificity compared with 6-item or 18-item USDA measures.^{16,17,27} Other studies also reported associations between food insecurity and marital status^{28,29} or self-reported health status.^{1,28} Prior research has consistently found a high prevalence of other basic resource needs among individuals with food insecurity.^{2,30,31}

In addition to its impact on operational decisions, the project had several

strengths. We used formal cognitive interviews of KPCO members to improve our baseline instruments and recruitment materials. Measures were largely drawn from existing surveys and the published literature (Table 2, available online at: www.thepermanentejournal.org/files/2018/18-098-T2.pdf). Baseline and follow-up surveys achieved a satisfactory response rate, with few missing data for most items. Although we did not systematically elicit narratives from KPCO members about their challenges in obtaining basic resources, we recorded several compelling stories (see Sidebar: Open-Ended Comments on Food Insecurity Surveys) that complement our quantitative findings.

The survey had several limitations that were inherent to its pragmatic design. First, the survey was limited to older adults who had previously indicated that they had food insecurity on the MTHA. Thus, these findings do not reflect the prevalence of social needs in the broader KPCO membership or in other settings. Additionally, food needs may have

resolved in the mean of 120 days between the MTHA survey and our smaller study. The new items included in this survey require further testing, psychometric analysis, and validation. Missing data for some items exceeded 10%, suggesting the need for additional exploration with respondents through cognitive interviews. Finally, the survey was small, and statistical power to detect differences was limited.

CONCLUSION

This small survey illustrates a continuous improvement process that had several operational consequences for measurement and interventions to address basic resource needs. First, organizational leaders resolved the trade-off between measurement accuracy and respondent burden by deciding to revise the MTHA to include a 2-item measure of food insecurity. Second, the survey showed that basic resource needs remained stable during a 3-month period, suggesting that longitudinal screening could take place at longer intervals. Third, our findings ratified the importance of assessing other basic resource needs in older adult KPCO members who reported food insecurity. Finally, the finding that many members with basic resource needs did not report outreach from KP or community organizations emphasized the need to develop better tracking processes for referrals and their outcomes in KP and in the community organizations. Despite their limitations, such surveys can promote organizational learning and help health care systems more effectively address the basic resource needs of their patients. ❖

Disclosure Statement

The author(s) have no conflicts of interest to disclose.

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Investment

There is no finer investment for any community than putting milk into babies.

— Sir Winston Churchill, 1874-1965, British politician, army officer, writer, and Prime Minister of the United Kingdom, 1940-1945