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Patient-Reported Social Risks and Clinician Decision Making: Results of a Clinician Survey in Primary Care Community Health Centers

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VISUAL ABSTRACT

ABSTRACT

PURPOSE To assess the extent that patients' social determinants of health (SDOH) influence safety-net primary care clinicians' decisions at the point of care; examine how that information comes to the clinician's attention; and analyze clinician, patient, and encounter characteristics associated with the use of SDOH data in clinical decision making.

METHODS Thirty-eight clinicians working in 21 clinics were prompted to complete 2 short card surveys embedded in the electronic health record (EHR) daily for 3 weeks. Survey data were matched with clinician-, encounter-, and patient-level variables from the EHR. Descriptive statistics and generalized estimating equation models were used to assess relationships between the variables and the clinician reported use of SDOH data to inform care.

RESULTS Social determinants of health were reported to influence care in 35% of surveyed encounters. The most common sources of information on patients' SDOH were conversations with patients (76%), prior knowledge (64%), and the EHR (46%). Social determinants of health were significantly more likely to influence care among male and non-English–speaking patients, and those with discrete SDOH screening data documented in the EHR.

CONCLUSIONS Electronic health records present an opportunity to support clinicians integrating information about patients' social and economic circumstances into care planning. Study findings suggest that SDOH information from standardized screening documented in the EHR, combined with patient-clinician conversations, may enable social risk-adjusted care. Electronic health record tools and clinic workflows could be used to support both documentation and conversations. Study results also identified factors that may cue clinicians to include SDOH information in point-of-care decision-making. Future research should explore this topic further.

Conflicts of interest: authors report none.

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INTRODUCTION

Despite increasing national interest in social risk screening in primary care settings[1-7] and the potential for contextual information to influence care in ways that improve patient outcomes,[8,9] little is known about whether and how social risk (adverse social determinants of health) information influences clinician decisions at the point of care. Few prior studies have explored the extent to which social determinants of health (SDOH) data informs care, and diverse definitions and measurement approaches make comparisons difficult. Broadly speaking, use of SDOH in care planning varies by practice specialty, clinician, and patient situation.[10-13] Studies that quantified the impact of SDOH on care have reported use rates of 22% to 59%,[3,11-13] and all concluded that missed opportunities are common.[8,10,11,14-16]

Social risk data could influence point of care activities in multiple ways. A 2019 National Academies of Sciences, Engineering, and Medicine report suggested 5 ways in which social care can be integrated into health care, 2 of which are applicable to actions at the point of care (assistance and adjustment).[17] Assistance, sometimes called social prescribing, involves connecting patients to community resources. Adjustment entails adapting medical care to accommodate social risk. Evidence is gradually mounting that assistance and adjustment interventions can improve health.[6,14,18-21] A recent United States Preventative Services Taskforce brief called for more high-quality research in this area.[22]

To better understand how information about patients' social and economic conditions influence decision making during clinical encounters, we conducted an electronic health record (EHR)-embedded card study survey in primary care community health centers (CHCs).[23] The aim was to explore if, when, and how clinicians use patient SDOH information to inform care planning. Prior studies indicate that clinician awareness about patients' social context can be derived from a variety of sources, including clinician and patient-initiated conversations, indirect and non-verbal clues, and patient chart documentation.[8,10,13,16,24-27] To address this, our survey asked how SDOH information came to the clinician's attention. Analyses assessed clinician, patient, and encounter characteristics associated with the reported use of social risk data during the encounter.

METHODS

Study Overview

This card study was conducted as part of a National Institutes of Health-funded trial, Approaches to Community Health Center Implementation of Social Determinants of Health Data Collection and Action (ASCEND; 1R18DK114701), a stepped-wedge trial that tested the impact of customized implementation support on clinic efforts to document social risk data.[28] Clinics in the parent trial were randomized into 6 wedges and received 6 months of training and change management support. Participating clinics were members of OCHIN, Inc, a national nonprofit health information technology organization serving CHCs. The study was approved by the Kaiser Permanente Northwest Institutional Review Board, which granted a waiver of informed consent for all data collection activities; card study participants were informed that participation was voluntary and survey completion implied consent. All OCHIN members sign an agreement that their EHR data may be used for research.

EHR-Embedded Card Study

Card studies are short surveys that examine the circumstances in which patients receive care.[29] Traditionally, card studies used paper cards; here, we embedded the card study into the EHR, as described elsewhere.[23] In brief, we selected the 2 clinicians at each ASCEND clinic with the highest number of patients with EHR-documented SDOH screenings. Participating clinicians received EHR prompts to complete 2 cards per day for 3 weeks. The card study did not become part of the patient's medical record. Surveys were designed to be completed in less than 1 minute and included questions about the origin of the clinician's knowledge about a patient's SDOH information and the impact of that knowledge on decision making during a specified primary care encounter. The survey used conditional branching.[30] The first question asked about factors that influenced care. If the clinician's response to this question included "patient-specific social and economic conditions (SDOH)," they received

additional questions about the origin and use of the SDOH data. If respondents did not choose the SDOH response, they received no further questions. Since SDOH was the term commonly used in CHCs to refer to social risk at the time of the study, we chose to use this term in both the card study and in this manuscript.

Analysis

Card survey data were extracted from the EHR following each clinic's intervention period. In preparation for analysis, a small number of incomplete and erroneous records were removed from the sample (eg, surveys that indicated no contact with the patient, were linked to a test patient record, or other minor data anomalies). Additional clinician, encounter, and patient variables were extracted from the EHR and matched to surveys. The independent variables included: encounter type; clinician credentials and sex; reason for visit; timing of visit (pre–COVID-19 pandemic [before March 2020] vs post [after March 2020]); patient insurance; and patient demographics. No survey data was collected during March 2020. Also included was whether discrete SDOH screening results were available in the EHR on the encounter date (SDOH data considered present if response to at least 1 screening question was in the EHR at or before the encounter for which the survey was completed). Patient age was categorized by 10-year increments for demographic reporting, but grouped into minors (less than 19 years), adults (19 to 64 years), and Medicare-eligible (65 years or more) for multivariable modeling. Similarly, race/ethnicity and language were dichotomized for modeling, but results are reported with more granularity in the tables.

Survey responses were grouped into a binary outcome: those indicating SDOH information influenced care in the

Table 1. Clinician and Survey Summary (N = 38)

Characteristic	Data
Credentials, No. (%)	
Physician	9 (23.7)
Advanced practice provider[a]	29 (76.3)
Sex, No. (%)	
Female	33 (86.8)
Male	5 (13.2)
Number of surveys completed, mean (SD)	16 (9.1)
Ever used SDOH to inform care in surveyed encounters, No. (%)	30 (78.9)
Always used SDOH to inform care in surveyed encounters, No. (%)	2 (5.3)
Never used SDOH to inform care in surveyed encounters, No. (%)	8 (21.1)

SDOH = social determinants of health.

Note: Clinicians came from 21 clinics nested within 14 health systems. Most clinics had 2 clinicians participate in the card study; 2 clinics only recruited 1 clinician and 2 clinics had usable data from only 1 clinician.

[a] Nurse practitioner or physician assistant; 1 recruited clinician was a registered nurse.

encounter, and those indicating it did not. Descriptive statistics summarized clinician, encounter, and patient characteristics, stratified by whether SDOH informed care. Summaries of survey responses were calculated and all responses to free-text questions were reviewed. Two questions (numbers 1 and 7) each had more than 25 free-text responses reflecting input from multiple clinicians from different study wedges. These were grouped thematically and are presented along with all discrete survey responses.

To assess relationships between covariates of interest and SDOH influence on care, generalized estimating equation (GEE) models were fit using a binomial distribution and a logit link function to produce crude and adjusted odds ratios (aOR) with 95% CIs. All models included a repeated measure for clinician to account for within-cluster correlation and invoked a robust sandwich error adjustment. First, univariate models were fitted for each covariate; univariate associations with $P \leq .20$ were then included in a final multivariate model. We used Structured Query Language and SAS programming to prepare the data for analysis (see methods paper),[23] and analyses used SAS Enterprise Guide version 8.3 (SAS Institute Inc).

RESULTS

There were 628 surveys completed. Eighteen incomplete records were removed from the sample: 14 indicated no contact with a patient (eg, test patients) and 4 due to data quality (eg, missing demographic data). The final analytic sample included 610 surveys. Of these, 16 were linked with patients who had 2 eligible encounters during the study period, resulting in 2 surveys per patient for 8 patients; these were treated as separate responses in analyses.

Clinician, Encounter, and Patient Characteristics

Analyses included 610 surveys completed by 38 clinicians in 21 clinics from January 22, 2019 through June 11, 2021 (Table 1).

Most clinics had 2 clinicians in the sample; 4 clinics contributed surveys from only 1 clinician. Two of those 4 recruited only 1 clinician, and the other 2 had only 1 of the clinicians submit any completed surveys. Clinician, encounter, and patient characteristics are reported in Table 2.

Survey Responses

The first question asked about factors that influenced care at that encounter; respondents were asked to check all that

Table 2. Clinician, Encounter, and Patient Characteristics of Card Surveys

Characteristics	Total Surveys, No. (%) (N = 610)	SDOH Influenced Care, No. (%) (n = 212)	SDOH Did Not Influence Care, No. (%) (n = 398)
Clinicians			
Credentials			
Physician	127 (20.8)	28 (13.2)	99 (24.9)
Advanced practice provider[a]	483 (79.2)	184 (86.8)	299 (75.1)
Sex			
Female	547 (89.7)	197 (92.9)	350 (87.9)
Male	63 (10.3)	15 (7.1)	48 (12.1)
Encounters			
Type			
In-person	504 (82.6)	179 (84.4)	325 (81.7)
Telehealth	106 (17.4)	33 (15.6)	73 (18.3)
Reason for visit			
Acute care	152 (24.9)	53 (25.0)	99 (24.9)
Behavioral health	15 (2.5)	3 (1.4)	12 (3.0)
Chronic condition	113 (18.5)	33 (15.6)	80 (20.1)
Hospital follow-up	21 (3.4)	13 (6.1)	8 (2.0)
Routine care	309 (50.7)	110 (51.9)	199 (50.0)
Insurance type			
Medicaid	285 (46.7)	101 (47.6)	184 (46.2)
Medicare	132 (21.6)	33 (15.6)	99 (24.9)
Private	107 (17.5)	30 (14.2)	77 (19.3)
Uninsured	86 (14.1)	48 (22.6)	38 (9.5)
SDOH in EHR at encounter?			
Yes	166 (27.2)	85 (40.1)	81 (20.4)
No	444 (72.8)	127 (59.9)	317 (79.6)
Pre/post–COVID-19 pandemic[b]			
Pre	318 (52.1)	135 (63.7)	183 (46.0)
Post	292 (47.9)	77 (36.3)	215 (54.0)
Patients			
Sex			
Female	353 (57.9)	109 (51.4)	244 (61.3)
Male	257 (42.1)	103 (48.6)	154 (38.7)
Age, y			
0-10	14 (2.3)	10 (4.7)	4 (1.0)
11-18	23 (3.8)	8 (3.8)	15 (3.8)
19-29	79 (13.0)	23 (10.8)	56 (14.1)
30-39	102 (16.7)	29 (13.7)	73 (18.3)
40-49	108 (17.7)	46 (21.7)	62 (15.6)
50-59	131 (21.5)	52 (24.5)	79 (19.8)
≥60	153 (25.1)	44 (20.8)	109 (27.4)

continues

EHR = electronic health record; SDOH = social determinants of health.

[a] Nurse practitioner or physician assistant; 1 recruited clinician was a registered nurse.
[b] Pre–COVID-19 pandemic for surveys completed before March 2020, post–COVID-19 for surveys completed after March 2020. No surveys completed in March 2020.
[c] Other includes multiple races, American Indian, Alaska Native, or missing data.

Table 2. Clinician, Encounter, and Patient Characteristics of Card Surveys, *continued*

Characteristics	Total Surveys, No. (%) (N = 610)	SDOH Influenced Care, No. (%) (n = 212)	SDOH Did Not Influence Care, No. (%) (n = 398)
Race/ethnicity			
Hispanic/Latine	131 (21.5)	60 (28.3)	71 (17.8)
Non-Hispanic White	300 (49.2)	71 (33.5)	229 (57.5)
Non-Hispanic Black	82 (13.4)	38 (17.9)	44 (11.1)
Non-Hispanic Asian	59 (9.7)	32 (15.1)	27 (6.8)
Other[c]	38 (6.2)	11 (5.2)	27 (6.8)
Preferred language			
English	457 (74.9)	124 (58.5)	333 (83.7)
Spanish	96 (15.7)	52 (24.5)	44 (11.1)
Nepali	26 (4.3)	22 (10.4)	4 (1.0)
Chinese	13 (2.1)	2 (0.9)	11 (2.8)
All others	18 (3.0)	12 (5.7)	6 (1.5)

EHR = electronic health record; SDOH = social determinants of health.

[a] Nurse practitioner or physician assistant; 1 recruited clinician was a registered nurse.
[b] Pre–COVID-19 pandemic for surveys completed before March 2020, post–COVID-19 for surveys completed after March 2020. No surveys completed in March 2020.
[c] Other includes multiple races, American Indian, Alaska Native, or missing data.

applied. Clinical factors were reported in 90% of surveys, patient preferences in 74%, available resources in 55%, and patient-specific social and economic conditions in 35% (Table 3).

The remaining questions were asked only in the 212 encounters in which clinicians noted that patient-specific SDOH information influenced the care provided. Fewer than one-half (40%) of the patients seen during these encounters had SDOH screening data available in the EHR at the time of the visit.

When asked how they knew the patient's SDOH information, 76% of clinicians reported conversation with the patient at the surveyed encounter, while 64% reported prior personal knowledge of the patient. Six free-text comments noted that relevant SDOH data had been mentioned in conversation during the encounter (data not shown). Nearly one-half (46%) responded they knew SDOH information from EHR review. Of the 97 surveys in that group, only 46% had discrete SDOH screening data recorded in the EHR at the visit.

Most survey responses (71%) from the 212 encounters indicated the time it took to look up SDOH information was "just right, didn't take long at all." Only 6 surveys (3%) reported it taking longer than expected or too long.

Regarding the impact of SDOH information on care, 82% of surveys reported it had "somewhat" or "a lot" of influence on clinical decisions, and 71% noted it had "somewhat" or "a lot" of influence on additional care provided (eg, referrals). Twenty-six surveys contained free-text answers to the optional question asking how care was changed; the most common responses reported referrals to low/no-cost follow-up clinical care. Additional responses detailed in Table 3.

Model Results

Odds ratios from univariate and multivariate models of associations between clinician, encounter, and patient characteristics and use of SDOH data are shown in Table 4. In the adjusted model, SDOH was significantly more likely to be used to influence care for male patients (aOR = 1.75, 95% CI, 1.18-2.59), non-English speaking (aOR = 3.49, 95% CI, 1.42-8.54), and those with SDOH documented in the EHR record (aOR = 3.18, 95% CI, 1.79-5.66).

DISCUSSION

Prior work by our team suggests positivity rates for social risk screenings conducted in CHCs varies widely, ranging from 11% to 97%.[31,32] In one large Veterans Affairs study, contextual red flags (clues that patients are struggling with life challenges that are complicating their care) were raised in 67% of recorded primary care encounters.[33] What clinicians do

Table 3. Card Survey Questions and Responses

Question and Response Options for All Surveys (N = 610)	No. (%)[a]
1. Which of the following factors influenced the care you provided during this patient encounter? (Mark all that apply)	
Clinical factors (eg, history, laboratory results, medications, etc.)	548 (89.8)
Patient-specific social and economic conditions (SDOH)	212 (34.8)[b]
Patient preferences	450 (73.8)
Available resources (eg, availability of specialty care, formulary restrictions, insurance requirements)	334 (54.8)
Other (free text):[c]	57 (9.3)
Language	28
Education/(health) literacy/knowledge/understanding	15
Transportation	15
Financial/cost/(lack of) health insurance	9
New patient	5
Motivation	4
	continues

EHR = electronic health record; SDOH = social determinants of health.

[a] Some questions allowed multiple responses, thus numbers and percentages may not sum to total.
[b] Of these surveys, 85 (40.1%) had standardized SDOH screening data in the patient's EHR at time of encounter.
[c] Each survey could have multiple free-text responses. Responses appearing in >3 surveys are reported and grouped thematically by authors.

with SDOH information remains understudied. Here, CHC clinicians reported that SDOH information influenced care in approximately 35% of surveyed encounters in a sample of US-based CHCs. This is broadly consistent with findings from prior studies in primary and specialty care, although the studies are not directly comparable given differing definitions of context and social risk.[3,12,13,33] These results have implications for the national dialog about performance measures related to actions taken to address identified social risks.

Our results suggest that clinicians rely on SDOH information from multiple sources in a single encounter. Notably, three-quarters of survey responses reported patient conversations at encounters as a source of such data, while nearly one-half reported learning SDOH information through EHR review. Given the time constraints of primary care, there are efforts to increase rates of screening through asynchronous data collection (questionnaires built into patient portals or paper forms), therefore shielding clinicians from the work of collecting the data. Such standardized screening approaches are constrained in scope and may not capture the nuance and detail necessary to provide individualized care,[25] though they can ensure that key data elements are captured. The findings presented here suggest that SDOH data sources are complementary, and that patient-clinician conversations may be crucial to understanding patients' relevant life circumstances. Social risk–related EHR tools and data collection workflows should therefore be designed and implemented to foster and support—not replace—these conversations.[34] EHR-based prompts can support the integration of multiple sources of contextual information, but evidence supporting such strategies is limited.[35,36] Standardized screening complemented by an emphasis on personal connection and dialog during and/or following the formal screening process could be a powerful tool to facilitate patient-centered care.

Study findings also have implications for the utility EHR-based SDOH documentation. For instance, almost one-half of survey responses cited the EHR as a source of SDOH data, and clinicians were significantly more likely to report that SDOH influenced care for patients with EHR-recorded SDOH data from standardized screening instruments. Yet, only one-half of encounters in which clinicians indicated the EHR as a source of SDOH information were with patients for whom standardized SDOH screening data were documented. From these responses, it appears clinicians were accessing

Table 3. Card Survey Questions and Responses *continued*	
Questions and Response Options for Surveys With Care Influenced by SDOH (n = 212)	**No. (%)[a,d]**
2. How did you know this patient-specific SDOH information? (Mark all that apply)	
Prior personal knowledge of the patient	135 (63.7)
Conversation with the patient during this encounter	161 (75.9)
Communication from other clinic staff	38 (17.9)
Review on paper SDOH screen	25 (11.9)
Reviewed in EHR	97 (45.8)[e]
Other	7 (3.3)
3. The amount of time it took to look up the patient-specific SDOH information was:	
Just right, didn't take long at all	151 (71.2)
Longer than I expected	5 (2.4)
Too long, I gave up	1 (0.5)
N/A, I didn't try	46 (21.7)
Other	9 (4.2)
4. Did you wish you had SDOH information that was not available?	
Yes	29 (13.7)
No	182 (85.8)
Missing	1 (0.5)
5. How much did the patient's SDOH information influence the clinical decisions (eg, treatment decisions, medications prescribed) you made?	
A lot	73 (34.4)
Somewhat	101 (47.6)
Not at all	38 (17.9)
6. How much did the patient's SDOH information influence any additional care you provided (eg, social service or behavioral health referrals, warm hand-offs)?	
A lot	54 (25.5)
Somewhat	97 (45.8)
Not at all	49 (23.1)
Not applicable	12 (5.7)
7. Optional: How did your care change?[f]	26 (12.3)
Referred to external low/no-cost programs for clinical care (eg, Imaging for a Cause, GoodRx)	8
Identified need for case management or home health	4
Adjusted follow-up schedule	4
Adjusted medication orders due to cost/lack of insurance	3
Considered mental health as potential source of symptoms or complicating factor	3
Unable to help because the clinic doesn't have necessary resources	2
Called landlord regarding living conditions	1
Connected patient with food assistance	1

EHR = electronic health record; SDOH = social determinants of health.

[a] Some questions allowed multiple responses, thus numbers and percentages may not sum to total.
[b] Of these surveys, 85 (40.1%) had standardized SDOH screening data in the patient's EHR at time of encounter.
[c] Each survey could have multiple free-text responses. Responses appearing in >3 surveys are reported and grouped thematically by authors.
[d] Questions 2-6 were only asked on surveys that selected "patient-specific social and economic conditions (social determinants of health)" as a response to question 1.
[e] Of these surveys, 45 (46.4%) had standardized SDOH screening data in the patient's EHR at time of visit.
[f] Multiple responses allowed. All responses reported and grouped thematically by authors.

what they considered SDOH data from chart locations other than the standardized SDOH screening results view(s). Our survey data on EHR workflow were difficult to interpret due to the variety of display configurations and clinician interpretation of variably named EHR chart locations such as SDOH sidebar, Snapshot, or Care plan. Future research might explore the type of information clinicians consider to be SDOH and how they use the EHR to document and locate this data.

One unexpected and robust finding was that SDOH were reported to influence care significantly more for male (vs female) patients. Given that males have lower primary care utilization,[37,38] clinicians may be more likely to attend to men's social needs if they expect fewer opportunities to do so. Alternatively, clinicians may prioritize the concerns of male patients. We observed no interactions between clinician and patient sex, but analyses were limited by the small number of male clinicians. More attention to differences in social care based on sex is warranted. Similarly, race/ethnicity and language influenced the likelihood of SDOH-related care changes. Clinicians were significantly more likely to report use of SDOH in care for non–English speaking patients. Language accounted for almost one-half of the free-text answers in the 9% of surveys indicating that other factors influenced the care provided. Patient-clinician language discordance typically requires immediate action (eg, use of interpreters), which may help explain this finding. Language is also an obvious indicator of difference that may prompt clinicians to explore additional contextual issues that may impact care. Future research should explore other cues that can be used to trigger the review and use of SDOH for point-of-care decision making.

Six important limitations should be considered in interpreting these results. First, clinics participating in this card study were part of a larger study designed to support clinics in SDOH screening implementation. A few of the participating clinicians were directly involved in implementation efforts, which may have led to a higher use of SDOH in clinical care decisions than would be found in a random sample of CHCs. Second, clinicians may have felt compelled to report use of SDOH data due to their clinic's participation in a study designed to increase rates of social risk screening. Third, alternatively, respondents

Table 4. Odds Of Card Survey Response Indicating SDOH Was Used to Inform Patient Care

Characteristics	Unadjusted OR[a] (95% CI)	Adjusted OR[b] (95% CI)
Clinicians		
Credentials		
Physician	ref	...
Advanced practice provider[c]	2.18 (0.71-6.66)	...
Sex		
Female	ref	...
Male	0.56 (0.21-1.45)	...
Encounters		
Type		
Office visit	ref	...
Telehealth	0.82 (0.27-2.54)	...
Reason for visit		
Acute care	ref	ref
Behavioral health	0.45 (0.14-1.55)	0.84 (0.23-3.14)
Chronic condition	0.77 (0.32-1.85)	1.00 (0.40-2.44)
Hospital follow-up	3.04 (1.18-7.80)	4.82 (1.62-14.67)
Routine care	1.03 (0.59-1.82)	1.35 (0.73-2.46)
Insurance type		
Medicare	ref	ref
Medicaid	1.65 (0.83-3.26)	1.24 (0.69-2.22)
Private	1.17 (0.65-2.11)	1.15 (0.63-2.12)
Uninsured	3.79 (1.67-8.61)	1.84 (0.84-4.02)
SDOH in EHR at encounter?		
Yes	2.62 (1.45-4.72)[d]	3.18 (1.79-5.66)[d]
No	ref	ref
Pre/post–COVID-19 pandemic[e]		
Pre	ref	ref
Post	0.49 (0.18-1.31)	1.03 (0.35-3.07)
Patients		
Sex		
Female	ref	ref
Male	1.50 (0.98-2.29)	1.75 (1.18-2.59)[d]
Age, y		
<18	ref	–
18-64	0.62 (0.20-1.97)	–
≥65	0.42 (0.13-1.42)	–
Race/ethnicity		
Non-Hispanic White	ref	ref
Other[f]	2.69 (1.34-5.40)[d]	1.50 (0.92-2.45)
Preferred language		
English	ref	ref
Other	3.64 (1.45-9.14)[d]	3.49 (1.42-8.54)[d]

EHR = electronic health record; OR = odds ratio; SDOH = social determinants of health.

[a] All models account for correlation within provider using a robust sandwich error adjustment.

[b] Model adjusted for all covariates that had a univariate *P* value of ≤0.20 (SDOH screening in EHR, patient sex, race/ethnicity, preferred language, and pre/post COVID-19); model accounts for correlation within clinician using robust sandwich error adjustment.

[c] Nurse practitioner or physician assistant; 1 recruited clinician was a registered nurse.

[d] Significant at *P* ≤.05.

[e] Pre–COVID-19 pandemic for surveys completed before March 2020, post–COVID-19 for surveys completed after March 2020. No surveys were completed in March 2020.

[f] Includes Hispanic/Latine ethnicity, Black, Asian, American Indian/Alaska Native, multiple races, and unknown race.

may have realized that if they reported that SDOH did not impact their care then they were done with the survey after a single question; it is possible this led to an under-reporting of SDOH use. As 79% of clinicians reported use of SDOH in some but not all encounters (Table 1), we believe neither of these options had a large effect on results. Fourth, the study was designed to limit the number of surveys given to any one clinician, making it challenging to examine the effects of individual clinicians' personal practices on SDOH data use in clinical decision making. Furthermore, this low number of surveys per clinician limited the power of our statistical analysis. More surveys might have identified additional factors associated with the use of SDOH and increased confidence in our findings. Fifth, clinician factors such as age, length of time in practice, race/ethnicity, and language concordance may correlate with the clinical use of SDOH information, but these clinician demographics were not available. Finally, though all clinicians that answered questions 2-7 initially reported that SDOH influenced the care they provided in the encounter, 12% (26 surveys) answered "not at all" when queried about both the extent to which the patient's SDOH information influenced their clinical decisions (question 5) and additional care (question 6). This lack of concordance may indicate data quality issues with these specific questions or the survey overall.

CONCLUSION

The pursuit of health equity[39] recognizes that individuals need different supports to attain similar results.[40] The ability to provide equitable care at the individual level is predicated on deep contextual knowledge of the patient. Clinicians in safety-net clinics have long considered patients' social and economic conditions when providing care. Electronic health records offer an opportunity to support this integration, but little is known about how best to leverage the EHR to do so. Our findings suggest that the combination of discrete SDOH information and directed conversations are likely to provide the nuanced data that enable personalized care. These new insights raise many additional questions that should be used to guide future research.

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