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Discuss and remember: Clinician strategies for integrating social determinants of health in patient records and care

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ABSTRACT

There is growing interest in standardizing data about social determinants of health (SDOH) in electronic health records (EHRs), yet little is known about how clinicians document SDOH in daily practice. This study investigates clinicians' strategies for working with SDOH data and the challenges confronting SDOH standardization. Drawing on ethnographic observation, interviews with patients and clinicians, and systematic review of patient EHRs—all at an urban teaching hospital in the US Midwest—we analyze three strategies clinicians deploy to integrate SDOH data into patient care. First, clinicians document SDOH using “signal phrases,” keywords and short sentences that help them recall patients' social stories. Second, clinicians use other technology or face-to-face conversations to share about patients' SDOH with colleagues. Third, clinicians fold discussion of SDOH with patients into their personal relationships. While these local strategies facilitate personalized care and help clinicians minimize their computer workload, we also consider their limitations for efforts to coordinate care across institutions and attempts to identify SDOH in EHRs. These findings reveal ongoing tensions in projects of standardization in medicine, as well as the specific difficulty of standardizing data about SDOH. They have important clinical implications as they help explain how clinicians may attend to patients' SDOH in ways that are not legible in patient records. This paper is also relevant for policy at a time when mandates to include SDOH data in health records are expanding and strategies to standardize SDOH documentation are being developed.

1. Introduction

Recent years have seen a push to standardize social data in electronic health records (EHRs) to support patient care, advance health equity, and improve hospital performance. Several US federal agencies have published mandates for EHRs to include data on social determinants of health (SDOH)—defined by the World Health Organization as “structural determinants and conditions of everyday life [that] are responsible for a major part of health inequities” (Centers for Medicare & Medicaid Services, 2016; Commission on the Social Determinants of Health, 2008; Office of the National Coordinator for Health Information Technology, 2014). Professional groups, non-governmental organizations, and prominent researchers have issued similar calls (Adler and Stead, 2015; Gold et al., 2017; Gottlieb et al., 2016; Institute of Medicine of the National Academies, 2014).

Efforts to structure SDOH data collection face several difficulties. One challenge is that little is known about how clinicians document SDOH in EHRs, or how they use SDOH data in its current unstructured

form for medical decision-making and patient care (Cruz and Paine, 2021). A further challenge is that SDOH are often tricky to identify in practice. Structural factors that influence population health disparities are well documented (Phelan et al., 2010), but it can be difficult to pinpoint structural forces as causal factors for individual patients. SDOH data standardization projects confront a gap in knowledge about how clinicians currently use SDOH data, as well as ambiguity around the term's very definition.

This study addresses these challenges by deploying ethnographic observation, interviews, and qualitative coding of EHRs to triangulate how clinicians talk and write about patients' SDOH. We selected a case likely to maximize consideration of SDOH: primary care clinicians at a large urban teaching hospital, seeing patients with diabetes and pre-diabetes. Diabetes management is a useful case because SDOH is known to be important in shaping diabetes outcomes, so clinicians treating patients with diabetes may be particularly attentive to SDOH (Hill-Briggs et al., 2021; Walker et al., 2014).

We find that clinicians' practices of discussing SDOH are not an

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obvious match to their practices of documentation. We identify three strategies clinicians deploy to integrate SDOH into their care, which we describe as local standards. First, when clinicians document SDOH in EHR free text, they use “signal phrases,” keywords or sentence fragments that code for fuller stories about patients’ SDOH. Second, clinicians work around the EHR to communicate about patients’ SDOH. Instead of documenting details of patients’ SDOH, they narrate patients’ lives to their colleagues off the screen. Third, clinicians integrate discussion of SDOH into their personal relationships with patients. They discuss SDOH as part of shared social identities and interests and in efforts to build rapport with patients. Taken together, this study demonstrates how clinicians provide care that attends to SDOH without necessarily documenting it. By illustrating how existing efforts to use SDOH clinically are divorced from documentation practices, these findings illuminate key challenges and opportunities for projects that rely on data standardization to pursue health equity and improve patient care.

2. Background

2.1. EHRs and standardization in medicine

Standardization may be defined as a process of creating uniformity (Timmermans and Berg, 2003). Medicine has been an important arena for sociological studies of standardization, as many projects have sought to organize and order medical knowledge and practice to make medicine a methodical science. Some scholarship on standardization in medicine has deployed the concept to critique the “hubris of modern medicine,” pointing to the growth of bureaucratic governance and constraints on humanistic dimensions of medical care (see Timmermans and Almeling, 2009). But standardization in practice is not so uniform. Standardization is often generative, creating new possibilities. Faced with increasingly rigid rules, people continue tinkering. For example, clinicians have been found to use evidence-based medicine (EBM) standards strategically, as they decide that compliance with standards can benefit them. Clinicians asked to implement EBM standards also continue to rely on their colleagues’ opinions to make decisions, and they adjust treatment protocols with their own patients on an ad hoc basis (Timmermans and Almeling, 2009).

Standards exist independently of standardization, often quietly, as infrastructure that organizes social life (Timmermans and Epstein, 2010). This means that even before they are standardized, tools like EHRs can be analyzed to understand the standards that govern their use. The EHR is home to many types of standards. It is a medical record, but it is also a billing tool, an instrument of clinician surveillance, a database of hospital performance metrics, and a communication platform (Berg, 1997; Berg and Bowker, 1997; George and Kohnke, 2018; Hunt et al., 2017; Reich, 2012; Saario et al., 2012; Woolgar, 1990). Each of the EHR’s many uses comes with a set of rules for engagement. Together, they make the EHR a site of sociological interest, a place where the standards and practices of medical care are shaped and revealed.

The process of standardizing SDOH documentation in EHRs appears to be as messy as other standardization projects. For example, studies that compare EHR data with interviews with patients find that SDOH in EHRs may not sufficiently describe patients’ social needs (Hirsch et al., 2022). Standards for SDOH data capture see a mismatch with how SDOH are described narratively. Moreover, interventions to incorporate additional social data have seen mixed results. Attempts to develop standardized processes for collecting SDOH find they further increase clinicians’ burden of documentation (Kotay et al., 2016). In some cases, the adoption of structured social data can constrain what EHRs can capture, to the point that the flexibility to document in a locally meaningful way is impaired (Cruz and Paine, 2021). Standardization in EHRs often pursues goals of improving care and promoting health equity, but the process can be complicated.

2.2. Social determinants of health and diabetes

The impetus to standardize social data in EHRs has grown alongside recognition of the importance of social determinants of health. Building on Link and Phelan’s (1995) theory that social factors like socioeconomic status are fundamental causes of health disparities, researchers have identified social genesis for health disparities based on experiences of racism (Geronimus et al., 2006; Phelan et al., 2010), gender discrimination (Rieker and Bird, 2005), and stress (Burgard and Ailshire, 2013; Pearlin and McCall, 1989), among others.

Recognition of the importance of SDOH motivates many of the calls to capture SDOH in medical records (e.g. Adler and Stead, 2015; Gottlieb et al., 2016; Institute of Medicine of the National Academies, 2014). Yet in practice, SDOH is often hard to pin down. As one recent systematic review finds, in many research studies, data described as “social determinants of health” are actually individual-level characteristics, like race, instead of more proximate sources of stratification, like racism (Evans et al., 2021). Even when it is possible to identify social forces that influence health, it may be difficult to demonstrate their effect on any one individual’s health. The line between social data and a social determinant can be hazy.

Still, though pinpointing SDOH can be challenging, there is wide agreement that social forces influence individual health and illness, especially in cases of diseases like diabetes. As a disease that requires extensive self-management, diabetes is highly affected by a person’s social circumstances (Hill-Briggs et al., 2021; Walker et al., 2014). Although on face value, self-management may seem to comprise individual-oriented cognitive and socio-emotional tasks, self-management is itself made possible or difficult by broader social and structural conditions (Hinder and Greenhalgh, 2012; Lutfey and Freese, 2005). This broad agreement that SDOH are important for dealing with diabetes informed our selection of patients with diabetes for fieldwork for this article, as a case where SDOH may be especially likely to be discussed.

3. Data and methods

Data for this article comes from ethnographic observation, interviews, electronic communications, and text in patients’ EHRs. All data collection was completed in 2019. For the ethnographic component, the first author shadowed three primary care clinicians at a large teaching hospital in the Midwest United States as they completed routine appointments with patients diagnosed with diabetes or pre-diabetes. Clinicians received an initial introduction to the study by email and were subsequently recruited through in-person snowball sampling. Across 70 h of fieldwork, the first author observed 31 appointments with 30 unique patients. A typical day involved accompanying a clinician through their clinical schedule, including computer work, conversations with colleagues, and interactions with patients within appointments. The first author took detailed handwritten notes, focusing on information relevant to SDOH. All notes were reviewed and typed up within 24 h. Following Jerolmack (2013), we use single quotation marks for dialogue reconstructed from ethnographic field notes. Quotations are rendered as faithfully as possible based on notes taken as conversations occurred in real time.

The first author also completed informal interviews with the three clinicians and semi-structured interviews with nine patients, about a third of the patients observed. The first author asked clinicians questions in real time during ethnographic observation. These go-along interviews focused on how clinicians used their computers, what they knew about patients’ SDOH, and how they decided what to discuss with patients and how to document patient encounters in the EHR. Interviews with patients ranged from 20 to 45 min with an average length of 27 min. Questions focused on patients’ social identities, SDOH as they pertained to diabetes care, patients’ relationship with their doctor, and their thoughts about what social information doctors should know about their

patients. The patient interviews were audio-recorded and transcribed verbatim. Patient interviews reflect a convenience sample; the first author invited patients to complete an interview whenever there was enough time to complete the interview before observing the next consented patient.

Finally, we completed thematic coding of the patients' EHRs. We employed professional chart abstracters to assemble de-identified medical records of patients observed. Each abstracted medical record included the full text of the observed visit's Office Visit Note—the clinician's narrative summary of the day's appointment—as well as the full text of the patient's Demographics page and Problem List, a page that reviews patients' complete list of medical diagnoses. Relevant historical data was also included: abstracters were trained to search for SDOH data at any point in the patient's historical record (see Appendix). The study received IRB approval from the first author's home institution and the hospital system in which the study was conducted. All patient, clinician, and institution names are pseudonyms.

The three sources of qualitative data—ethnographic observation, interviews, and textual EHR data—supply analytic leverage to perceive differences in how SDOH is discussed and documented. These different data sources paint a richly textured portrait of clinical practice and enable comparisons among how SDOH are configured in different conversations and records. In this way, although our data reflect the practices of specific clinicians at a single clinic site, we leverage extensive exposure within our case to ensure our data's quality (see [Small and Calarco, 2022](#)).

The first author completed data analysis using NVivo. Analysis began with a careful read of all study data to generate inductively an initial set of codes. The first author then completed a more targeted round of coding focused on SDOH discussed within appointments, SDOH documented in medical records, and clinicians' strategies for EHR use. The strategies described below reflect themes that emerged from this targeted analysis. A principal challenge for our study was to decide how to operationalize SDOH, given the ambiguity surrounding the term. For both the analysis in NVivo and the professional chart abstracting, we started with the WHO's definition of social determinants of health: "structural determinants and conditions of everyday life [that] are responsible for a major part of health inequities between and within countries" ([Commission on the Social Determinants of Health, 2008](#)). To identify specific SDOH, we looked for social data that fit within WHO's guidelines about factors that constitute those structural determinants and conditions: economic stability; neighborhood and physical environment; education; food; community and social context; and health-care system ([Artiga and Hinton, 2018](#)). Additional details about the operationalization of these categories appear in the Appendix. Acknowledging the difficulty of knowing whether a specific social condition affects an individual person's health, we counted as SDOH only social data that either a clinician or a patient directly suggested had an impact on the patient's health, drawing from our ethnographic data, interview transcripts, and occasionally the EHR itself.

4. Findings

We begin by presenting the general pattern across our fieldwork: Clinicians expressed interest in attending to SDOH and discussed SDOH frequently with patients and colleagues, but they did not typically document SDOH in patients' EHRs. We then analyze the strategies clinicians deployed to elicit, convey, and use SDOH data. First, when clinicians did document SDOH, they used "signal phrases," keywords or short sentences that helped them recall patients' SDOH. Second, clinicians briefed their colleagues about patients' SDOH through channels other than the EHR. Third, clinicians talked about SDOH with patients in the context of their interpersonal relationship, often bonding over shared identities and interests. These local standards comprise clinicians' strategies for incorporating SDOH data into clinical care without necessarily documenting them, at a moment when external standards for

doing so were under development.

4.1. Discussion without documentation

Attention to social determinants of health was a stated priority for the clinic we studied. Dr. Walker saw our research as a complement to her ongoing work on racial equity in diabetes care: "I think this lends strength to our project and welcome this arm of our efforts to address equity in care," she wrote in an email inviting us to her clinic. Dr. Walker's colleagues were similarly enthusiastic. Dr. Adler filled downtime with questions about how sociologists study social influences on health. He also recruited our third clinician: "This is huge for Dr. Li!" he exclaimed in our initial meeting, conveying his colleague's enthusiasm for attending to SDOH.

Though clinicians agreed that SDOH were important, they also suggested they rarely wrote about it. "I would guess I include social determinants only when it is a core part of the story," Dr. Li speculated. "Like if a patient can't afford their prescriptions." Dr. Li added she might also write about a patient's SDOH 'narratively, if a patient brings up their grief or something of that nature.' Dr. Li's comment illustrated the puzzle of this article precisely. Clinicians had discretion to write about SDOH or not, and they could phrase the narrative any number of ways. How did they decide when social determinants were a 'core part of the story,' and how did they decide how to document that story?

Dr. Li's self-assessment fit an observed pattern. Clinicians often had long conversations with patients that linked patients' social circumstances to their ability to manage their diabetes, but they did not reproduce them in the EHR. One such example was when Dr. Walker saw Jane, a 66-year-old patient. Both Black women of about the same age, Jane and Dr. Walker had an easy rapport. After answering Dr. Walker's initial questions, Jane shared a chilling story about her elderly father. Jane explained she wanted to bring up something that her father had been experiencing recently that was affecting both his health and hers, as his primary caregiver:

'My dad is having flashbacks to lynchings,' Jane said. 'Every night he talks in his sleep.'

Suddenly, Jane started yelling, relaying what her father shouted during these nightmares. The racial slurs echoed off the sterile walls of the exam room. Dr. Walker and I sat, stunned.

'He was involved in all that?' Dr. Walker asked quietly, after a beat.

'Yeah,' Jane said. 'Grew up in the South.'

'Yeah,' Dr. Walker murmured. 'My daddy, too.'

Dr. Walker transitioned to ask how coordinating her father's care influenced Jane's ability to control her diabetes. Jane explained she was stressed out because her brothers did not shoulder an equal burden of this care. Jane saw the connection between these challenges and her diabetes:

'My A1C was sky-high last time I saw you,' Jane noted. 'Can stress make it go up?'

'Yes,' Dr. Walker said.

'Because I admit, when I'm stressed, I eat a bag of potato chips. And not a little bag,' Jane said.

'A \$1 bag?' Dr. Walker asked.

'A big bag,' Jane emphasized.

Dr. Walker and Jane had a long discussion about how Jane's caregiving challenges influenced her diabetes management. In contrast, all that Dr. Walker documented in Jane's EHR was: "Stress up. Trouble caring for father." Dr. Walker did not write up the details that connected Jane's father's nightmares about lynchings and Jane's stress, eating habits, and lack of social support to her diabetes.

Why would clinicians who care about SDOH not document it? Norms about EHR documentation reflected institutional priorities instructed formally through clinicians' training and reinforced by organizational leadership. Instruction about how to document patient encounters eschewed attention to SDOH in favor of information that met documentation requirements and maximized reimbursements to the hospital. It may be noted, of course, that many efforts to standardize SDOH are the products of value-based payment programs (Adler and Stead, 2015; Institute of Medicine of the National Academies, 2014). SDOH documentation and reimbursement maximization are not necessarily opposed. As our findings demonstrate, however, organizational standards for documentation can constrain some types of SDOH documentation, even if they seek to incentivize it.

In early July, Dr. Li started mentoring Dr. Reza, a new medical resident. Immediately upon meeting him, she explained how to use the EHR. Clicking through a patient record, she narrated how to optimize billing:

'Once the visit diagnosis is done, you can make the note editable and add a few sentences about the primary diagnosis.' Dr. Li gave a demonstration on the spot, dictating a patient note. 'I will bill this as Level 4, because she had two problems,' Dr. Li explained.

'3 and 4 is most of what we do,' Dr. Reza said, checking. 'Unless it's really bad?'

'Yeah, it's hard to justify Level 5,' Dr. Li said.

Dr. Reza's introduction to the clinic was an introduction to the EHR. His first lesson was how to code encounters for billing.

Dr. Li's instructions reflected goals set at the organizational level. One day in a staff meeting, Dr. Ocampo, the division head, displayed a chart comparing the department's doctors according to the percentage of their patients meeting metrics for chronic disease control, including blood pressure, hemoglobin A1C, and cancer screening completion. Dr. Walker ranked near the bottom.

Dr. Ocampo explained that his internal evaluation previewed an audit to be completed by the administrative group that oversees the hospital system's primary care clinics:

'They are doing queries on HCCs [Hierarchical Condition Categories, medical codes that correspond to clinical diagnoses and are used to project care costs and calculate payments to healthcare organizations treating patients insured by Medicare],' Dr. Ocampo explained. 'They're looking for opportunities to improve, better ways to code.'

When the meeting ended, Dr. Walker stayed back, looking nervous. She explained to Dr. Ocampo, 'Because I've been here so long, most of my patients are elderly, which means they're quite complicated.' Dr. Ocampo assured her she would not be reprimanded. 'We just want to talk to you about these opportunities,' he said.

Clinicians were regularly instructed in how to use the EHR. These instructions fit institutional priorities like maximizing the hospital's reimbursements for care. The metrics they used to measure success tended to deprioritize or constrain the details of social influences on patients' health, like Jane's experiences of intergenerational trauma. Clinicians were taught to use the EHR as a billing tool, not a record of patients' health-related narrative.

If clinicians do not typically document SDOH in patients' EHRs, how do they convey social data related to health? In the following sections we analyze three strategies clinicians deploy to mobilize SDOH for medical care.

4.2. Signal phrases

When clinicians documented topics related to SDOH, they typically alluded to them with short phrases or sentences. These "signal phrases" evoked rich stories that clinicians engaged in visits.

One case that exemplified this dynamic was Thomas, a 50-year-old patient of Dr. Li's. As Dr. Li reviewed Thomas's EHR before his visit, she explained how Thomas's work limited his capacity to manage his diabetes:

'He's busy working, doing a lot of stuff. Not a lot of time to manage his diabetes. Diabetes is hard because it requires daily attention. I don't control what he eats or how he spends his time. All I can do is adjust the insulin.'

In the room with Thomas, Dr. Li focused on Thomas's strategies for paying attention to his diet and sugar levels.

'Do you notice an effect when your sugars are high?' Dr. Li asked.

'Yeah, I have to take the glasses off to see,' Thomas said. Dr. Li pursed her lips in confusion; Thomas wasn't wearing glasses. Thomas clarified he meant safety goggles worn at work.

Dr. Li transitioned to ask Thomas what he had eaten that morning. They had a long conversation about Thomas's diet. Then Dr. Li noted, 'You went to see our diabetes educator about two years ago, but it was hard with your work schedule. Is that still the case?' Thomas said yes, that would continue to be the case.

Dr. Li knew Thomas's work—he had one job as a baggage handler at the airport and another as a factory die setter—constrained his ability to monitor his diet and attend diabetes education programs. She focused her questions for Thomas on elaborating how his work and his diabetes intersected. Thomas's EHR, on the other hand, had only the briefest reference to Thomas's work: Dr. Li wrote that Thomas "works nights." In our review of Thomas's historical record, the only other mention of work was an entry from early 2019, when Dr. Li wrote a note to excuse Thomas from work. For Dr. Li, "works nights" was enough to recall a full story of how Thomas's jobs made diabetes management difficult.

In some cases, clinicians could recall detailed stories about patients' SDOH without documenting any social data at all. When Dr. Walker prepared to see Nellie, a 59-year-old patient, she remembered the social influences on Nellie's diabetes management simply from the date of her last visit:

Dr. Walker pulled up Nellie's EHR. 'I saw her on 5/31—why is she back again?' she wondered aloud. 'Oh yeah. It's because she had too much going on: She's been busy taking care of her family. She's a caregiver. Look, her A1C was 6.8 two years ago, and then last time 11.6. And she saw a dietician.' Dr. Walker scrolled down in Nellie's visit history to find when: '... in 2016. She's got to take care of herself. We've got to get her back on the program.'

In our review of Nellie's historical record, we found no mention of her caregiving responsibilities at any point. They were, however, something she stressed in her interview as an important influence on her own health: "Once I started exercising and eating right, my A1C levels went down to 6.4. But then the last three years, I haven't even been to the doctor. I've been so busy taking care of other people, I didn't even recognize that I hadn't been to the doctor myself in three years."

Nellie's caregiving work was also a focal point of the visit. In response to Dr. Walker's questions about her diet and medication adherence, Nellie explained, 'I lost a brother, a cousin, to cancer. I don't have time to take care of me.' Dr. Walker asked follow-up questions about Nellie's caregiving, and Nellie explained her other brother, who had a stroke and needed 24-h care, was doing better. Dr. Walker remembered the relationship between Nellie's caregiving and her ability to attend to her diabetes and anchored the visit's conversation around it, yet the reminder in the EHR was simply that Dr. Walker had seen Nellie six weeks prior.

Clinicians' tendency to use signal phrases extended even to visits where SDOH was the primary topic of conversation. Dr. Li had an extensive discussion about social influences on stress and diet with Hector, a 21-year-old patient with depression, obesity, and pre-diabetes.

Hector was concerned about stress from school and managing his weight, and his mother was having difficulties switching Hector's insurance:

'How's the Zolof?' Dr. Li asked.

'Good,' Hector said, his affect flat. He mumbled something unintelligible.

'You're having belly pain,' Dr. Li said, repeating what Hector had evidently said. She asked several follow-up questions. Then she asked Hector's mother about her efforts to change their insurance. Dr. Li then returned to the stomach pain, asking Hector when it happens.

'The problem is when I get bad news,' Hector said. 'I get upset, then I have to calm down.'

'Now if I'm remembering right, you had been in school?' Dr. Li prompted.

'Yeah, I graduated in May,' Hector said. 'That was a lot of what was giving me anxiety.'

Dr. Li transitioned into a conversation about diet. Hector seemed not to understand Dr. Li's explanations.

'Is muscle milk good for you?' Hector asked.

'Muscle milk is ... not a food,' Dr. Li said, searching for words. 'It's not going to help you lose weight.' Hector's eyes were glassy and confused. He asked a series of nearly identical follow-up questions.

Later that afternoon, Dr. Li elaborated about the insurance conversation. She explained, 'They've got Medicaid, which only covers community mental health. His brother saw someone through that and didn't like it. There's tons of turnover, so you're seeing someone different every time. His mom is trying to get different insurance.'

The social influences on Hector's depression, obesity, and pre-diabetes were manifold, but they appeared in Hector's EHR in abbreviated form. "His mother trying to change insurance," noted Dr. Li. Regarding Hector's struggles with weight and eating, Dr. Li wrote: "Patient is interested in losing weight, does not have strong techniques for doing so." The social details that explained Hector's challenges to access psychiatric care and manage his eating were the focus of Dr. Li's conversation with Hector and his mother, but they appeared in extremely abbreviated form in the EHR.

Other times, SDOH signal phrases occluded the relationship between social data and a patient's health. When Dr. Adler met with Rhonda, conversation focused on her struggles to control her blood sugar levels with her diet:

'I am such a slave to what I eat,' Rhonda complained, tears welling.

'Having diabetes is so hard,' Dr. Adler empathized. He took Rhonda's blood pressure. As he did, he asked if she was still gardening.

'No, I live in an apartment on the third floor,' Rhonda said, sadly. 'My goal is to move back into a house someday, so I can garden again.'

Dr. Adler's question about Rhonda's love of gardening elicited important social data: Rhonda had moved and lost her garden, which impeded both her access to fresh food and her happiness. Dr. Adler began his visit note by mentioning Rhonda's hobbies: "72-year-old woman who loves reading about cooking and gardening." However, Dr. Adler did not document Rhonda's move. Instead, the more extensive social data stayed within the set of things they spoke about.

Signal phrases often prompted clinicians to recall detailed stories about their patients. Brief phrases, including those with perhaps no obvious reference to SDOH, were helpful shorthand for their authors, a timesaving code for complex social details that clinicians understood to inform patients' health.

4.3. Workarounds and warm handoffs

A second strategy clinicians used to communicate about SDOH was to brief their colleagues "off the record." Instead of using the EHR, clinicians tended to share details about patients' SDOH with colleagues in person (Saario et al., 2012).

Clinicians often used face-to-face interactions to share patient details they saw as potentially stigmatizing. One day Dr. Li's medical assistant Latoya announced that Dr. Li's next patient had arrived in a bad mood. 'Ooh, she's mad!' Latoya warned. She explained that Aliya, a 45-year-old patient, was trying to access the new shingles vaccine but had been told her insurance would charge her \$400, which she could not afford. When Dr. Li met with Aliya, she asked about her bad mood:

Aliya was still fuming when Dr. Li and I came in. 'You seem a bit stressed today,' Dr. Li suggested kindly.

'I'm very stressed,' Aliya agreed. 'I'm trying to sell my house. A lot of things aren't working as they should.'

'I can see you're trying to keep it together,' Dr. Li said. 'Are you still seeing the therapist?'

'Yes,' Aliya said, softening. 'Also, my A1C: should I be getting that checked every three months?'

'Every three or six, whatever,' Dr. Li said. 'You're so well-controlled. I don't want to stick you more than we need to.' Dr. Li continued with questions about Aliya's blood pressure and medications.

'And you've been in touch with your insurance,' Dr. Li prompted, switching gears.

'Yeah,' Aliya said. 'I was mad because I want someone to help me. I want the shingles vaccine. I don't like seeing it on there'—she gestured to the computer—'saying I'm out of date.'

'I'll see what I can do to get it covered for you,' Dr. Li said.

'I really appreciate it,' Aliya said, now calm. 'I'm on a budget.'

'Yes, I know we've talked about that before,' Dr. Li said.

Dr. Li perceived that Aliya's anger was frustration about her physical ailments and financial struggles. She calmed her down by inviting Aliya to discuss her stressors. Like Latoya, Dr. Li kept these details out of Aliya's EHR; her visit summary simply reviewed Aliya's physical health issues. Dr. Li explained why she worded the entry this way: 'She has a lot going on, and she's clearly trying hard. She apologizes a lot for being high maintenance.' Rather than document how Aliya was 'high-maintenance,' Dr. Li and Latoya conversed about Aliya's challenges off the record.

Further evidence that clinicians sometimes thought the EHR was an undesirable location for patients' SDOH was they often avoided using it. Dr. Walker's patient Aisha was one such example:

Dr. Walker was excited that Aisha had consented to participate in our study. 'She's a great case,' Dr. Walker enthused. She narrated Aisha's whole story from memory: Aisha became depressed after getting diagnosed with diabetes. Then she went into kidney failure and lost a lot of weight. She spoke little English and was housebound, except for her many doctors' visits. 'She sees everybody,' Dr. Walker emphasized.

I asked where Aisha was from. 'Middle East,' Dr. Walker said. 'I'm not sure what country.' She turned to her computer and clicked around to find the demographics page but couldn't locate it. She moused over various buttons, clicking back and forth. She scanned through menu options—nothing. Eventually Dr. Walker asked Janice, her medical assistant. Janice found the demographics page by clicking first on "More," then on "Rarely Used," and then finally on the third menu bar, "Demographics."

Dr. Walker knew most relevant details about Aisha's social circumstances as they pertained to her health. She did not, however, document them extensively in the computer, nor did she regularly access what was there. Janice had to click the "Rarely Used" tab to find them. The social information Dr. Walker used to understand influences on patients' health was stored off screen, in her own head. When she sought to share about her patients, she preferred to narrate face-to-face.

Clinicians also worked around the EHR in recognition that their use of the technology was subject to constant surveillance (Reich, 2012). One day Dr. Howard, another clinician in the practice, approached Dr. Li to give a "warm handoff," a face-to-face review of a patient's medical and social history when transitioning care providers (Saag et al., 2018):

Dr. Howard explained, 'He was hospitalized with chest pains. A CT scan and an MRI were completed; results posted Monday evening. Usually I call immediately, but it was late. Then I forgot to call on Tuesday. On Wednesday, the patient's daughter called me screaming bloody murder—which I understand. I didn't call with results. So that's why I transferred to you,' Dr. Howard concluded, matter-of-factly. 'I think he just needs two specific follow-up tests, but since he's not my patient, I can't look at his chart.'

Dr. Li frowned. 'You can still look at his chart,' she affirmed.

'They monitor this stuff so carefully now, I don't want to take the chance,' Dr. Howard said, emotion creeping into his voice.

'Okay, well thanks for the warm handoff,' Dr. Li said sincerely.

Dr. Howard wanted to explain to Dr. Li not only the patient's medical history but also his relationship with the patient's family, which motivated his reasons for transferring care. He went around the EHR to convey this information because he worried he would be disciplined for accessing a former patient's record.

Warm handoffs allowed clinicians to share SDOH directly with colleagues to contextualize their patients' situations and coordinate care. In face-to-face conversations, they had space to narrate complex stories about their patients and explain potentially stigmatizing factors without committing anything to the record.

4.4. Personal relationships

A final strategy clinicians used to integrate SDOH into care was to bring them up in the context of their personal relationships with patients. Typically these connections came through discussion of shared interests and identities. Dr. Walker exemplified this dynamic when she saw Keke, a 42-year-old patient:

'I want you to keep watching your weight,' Dr. Walker said, noting Keke gained nine pounds since her last visit.

'I'm out for the summer, so I've got time,' Keke reflected. 'I spend a lot of time in my garden.'

'Oh, gardening!' Dr. Walker said, delighted. 'We have to talk. What's your favorite flower that you've planted?' They launched into an animated conversation.

Dr. Walker next asked Keke about work. She said she was a teacher at Central High, a major high school in a nearby majority-Black city. Hearing this, Dr. Walker made a linguistic shift. Instead of the Standard English she typically used with patients, she started speaking in African American Vernacular English. Though Dr. Walker had a warm rapport with many patients, this shift made Keke light up with recognition.

'That's my alma mater!' Dr. Walker exclaimed with a smile. She continued the visit weaving Keke's occupation into discussion of her health: 'Let's check your ears. You know we gotta check your ears 'cause you a schoolteacher.'

Keke jumped to social factors when Dr. Walker asked about her

weight. She reflected that her summers off from work as a teacher afforded her time to focus on diet and exercise. This mapped neatly onto Keke's interview answer about social details she needed her doctors to know to care for her diabetes: "lifestyle." Keke elaborated she particularly appreciated what Dr. Walker knew about her work as a teacher and her love of gardening and animals. In the visit, Keke opened up as Dr. Walker emphasized their connection as Black women with ties to Central High who love to garden, facilitated by Dr. Walker's switch to AAVE (see Brown and Casanova, 2014). Keke's EHR, in contrast, had no information about the social influences on her ability to monitor weight and diet.

Dr. Adler also connected with a patient over his occupation without documenting the relationship between his work and his health. Harold was a 60-year-old project manager with a PhD. He supplemented his primary job by teaching community college. Dr. Adler, the spouse of a professor, engaged Harold about teaching throughout the visit:

'I'm having a lot of headaches,' Harold noted.

'Is your semester over?' Dr. Adler asked.

'Yes, but I'm teaching online this summer,' Harold explained. 'A capstone course on business management.'

'Someday I'd like to see you in action,' Dr. Adler said glowingly.

'I'll invite you!' Harold offered, a grin sweeping over his face. Moving on, Harold noted his blood sugar numbers were looking good, so long as he stopped eating after 7 pm.

'That's good,' Dr. Adler said. 'A+ on that. Let me get back to the first thing you said. We're all about customer satisfaction these days.' Both men smiled and Harold elaborated on his headaches. Dr. Adler spent the rest of the visit trying to deduce the cause.

Dr. Adler's first question about Harold's headaches was whether his work as a lecturer might be an influence. He later redirected Harold away from discussion of diabetes with jokes that referenced Harold's professional life, giving Harold an "A+" on his well-controlled diabetes and then ribbing the business management lecturer about being focused on "customer satisfaction." Harold's medical record, on the other hand, mentioned Harold's profession only in the demographics section, and not as possibly related to his headaches.

Some of the most powerful moments when SDOH took the patient off the page came in discussion of religious faith. Richard, for instance, an 82-year-old patient of Dr. Walker's, brought up his faith as a source of strength:

Dr. Walker started by asking Richard how he was doing. Richard said he was doing fine, but his son—who had autism and diabetes—had just started dialysis. Also his wife was living in a nursing home. Richard described his weekly schedule, full of caring for his son and his wife.

'How did you and your wife manage with your son when he was younger?' Dr. Walker asked.

Richard pointed his finger toward the ceiling. 'God.'

'Yeah,' Dr. Walker enthused. 'You know He helps with everything.'

Richard understood religion as essential to his wellbeing. In his interview, he emphasized his doctors needed to know his faith helped him manage his own health on top of all the care he provided for his family. Although it was a point of connection in their visit, Dr. Walker did not write about Richard's faith in his EHR. Dr. Walker connected with other patients over shared faith as well, including Reina, a 69-year-old patient:

'Your heart is steady,' Dr. Walker reported, listening with a stethoscope.

'Yes ma'am, God is good,' Reina said.

'All the time,' Dr. Walker agreed.

'Yes ma'am, yes ma'am,' Reina said.

Religion came up again when Dr. Walker instructed Reina to develop a plan for exercise.

'My daughter is the one who gets me moving,' Reina reflected. Her daughter Katy, who had joined for the appointment, beamed. 'I just want to say I'm a blessed woman,' Reina continued. 'I'm a mother of eight. I thank God for every day that I'm healthy.'

'You spread that word,' Dr. Walker nodded. 'I'm just a doctor. He is the ultimate healer.'

In the EHR, Dr. Walker made notes about the social support Reina received from her daughter: "Patient lives with daughter and her husband for last 4–5 years. Good relationship." She did not, however, mention Reina's faith.

Clinicians often brought up social information to engage and bond with patients, but they rarely documented what they learned. This strategy may have promoted rapport and supported patients' comfort. Moreover, some social data related to shared identities may be desirable not to document—consider Dr. Walker's conversation with Jane about her father's nightmares. Dr. Walker may not have wanted clinicians who had less rapport with Jane to read or ask her about the experience, or Dr. Walker may not have wanted to engage the story again, herself. When SDOH intersects with shared social identities and experiences, clinicians may discuss SDOH in the context of their relationship with their patients, and there it may stay.

5. Discussion and conclusion

This study investigated how clinicians engage and write about SDOH at a moment when calls to standardize SDOH documentation are multiplying, but standards are still being set. Though the clinicians we observed are trained to document in ways that optimize billing and deprioritize social narratives, we find clinicians use several strategies to integrate SDOH into care. They write brief phrases that jog their memories or discuss SDOH in face-to-face conversations with colleagues. Clinicians also engage SDOH in conversations with patients, strengthening their interpersonal relationship. Some details of these findings may reflect practices specific to the clinicians studied, but each represents a local standard maintained in a moment of looming standardization.

These strategies have a variety of effects. They support clinicians as they seek to meet institutional priorities for incentivized documentation, remember what matters most for patients' care, communicate effectively with colleagues, and build relationships with patients. When signal phrases jog clinicians' memory, they may be a quick way to capture SDOH. Yet this strategy depends on clinicians' ability to remember what their signal phrases signify, which also means clinicians must explain their own notes to others. Signal phrases may therefore be insufficient to coordinate care across providers or institutions, a challenge more consequential for patients who receive care in multiple places. While clinicians can compensate with a warm handoff, this strategy requires a relationship between clinicians. Within visits, the SDOH clinicians elicit can forge a powerful interpersonal bond. On the other hand, when SDOH is considered the provenance of a social relationship, it is slotted low in a hierarchy of medical information. By not documenting SDOH, clinicians may be implicitly demoting it.

Our findings have implications for the many ongoing efforts to standardize SDOH documentation, suggesting a variety of possibilities and limitations for relying on data standardization to pursue health equity and improve health care. A requirement to document SDOH is a mandate to make SDOH part of each patient's clinical narrative. Standardized documentation would rely less on individual clinicians and details about SDOH they may keep in their own heads, or the SDOH they

convey to colleagues "off the record." It could be particularly transformative for clinics where SDOH are otherwise a low priority. Yet the difficulty of defining SDOH for the purposes of standardization will remain. Some SDOH may lend themselves better to structured data capture than others. An annotation that a patient "works nights" may carry easy associations with the challenges of control over time, schedule, and diet that can make diabetes self-management difficult. But how would a story like Jane's be standardized? The possible influences of racism, intergenerational trauma, and gendered divisions of care labor do not map with certainty onto a specific category of SDOH. Moreover, the case points to reasons clinicians and patients may find discretion over social data capture to be beneficial. There may be ambiguity around how or whether a social factor influences a person's health. There are also situations where documentation could cause harm to the patient, the clinician, or their relationship.

Efforts to add more SDOH to EHRs must think carefully about the tradeoffs. Digitizing SDOH requires a translation of clinical conversations and local practices into standardized documentation (Garrety et al., 2014; Petrakaki and Klecun, 2015; Timmermans and Berg, 2003). Adding more to the EHR therefore also involves a set of decisions about what is valued (Cruz, 2022). Structured SDOH data has been shown to promote clinicians' thinking about social influences on health, but SDOH does not lend itself well to strict categorization (Kotay et al., 2016). This means structured SDOH could even constitute a loss of social data if it displaces clinicians' local practices (Cruz and Paine, 2021). At the same time, without requirements to document SDOH, inclusion of this data is left to clinician discretion.

Despite these challenges, standardization of SDOH data holds great promise for efforts to support health equity and patient health. Sociological scholarship on standardization repeatedly finds that standardization projects are full of unintended consequences (Timmermans and Almeling, 2009). Standards often become a blueprint for action and not a rigid code. People nominally subjected to standards inevitably express creativity, making standards work for them (Timmermans and Epstein, 2010). In this respect, the real challenge of standardizing SDOH documentation is to devise standards flexible enough that they can be bent.

Attention to SDOH in patient health records can be an invaluable tool in pursuit of health equity. What that attention may look like remains, for the time being, open to many possibilities. As standards for SDOH documentation begin to be set, this article has described a set of extant local standards, attentive to the constraints of other documentation requirements and the demands of doctoring as an interpersonal relationship. Efforts to standardize SDOH documentation must also consider the social forces that circumscribe the medical record, knowing that these structures inform not only patient narratives but health itself.

Credit author statement

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Data availability

The data that has been used is confidential.

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Appendix. Template for Social Determinants of Health Chart Abstraction

Source Page	Content	Sample Language or Key Phrases
Demographics Page	Race/ethnicity Age Gender Socioeconomic status	Occupation, income, educational attainment
Office Visit Note from This Visit	Full text of office visit note	
Prior Office Visit Notes	Economic stability Neighborhood and physical environment Education Food Community and social context Healthcare system	Employment status, income, expenses, debt, outstanding medical bills, sources of economic support Housing stability, transportation to or from clinic, feelings of safety in home and neighborhood, ease or difficulty getting exercise in neighborhood, ability to exercise in neighborhood Used professional translator or family member or friend to translate, literacy or illiteracy, primary language, patient's educational background Having not enough food to eat, skipping meals, difficulty accessing healthy food options Family members or friends providing support, involvement in community or social groups, experiences of discrimination, feelings of social connection or social isolation Issues having healthcare covered by insurance, difficulty seeing care providers, problems communicating with care providers, problems coordinating care, difficulty accessing providers in different locations
Problem List	Diagnoses from this visit	
Results/Labs	Hemoglobin A1C test results within three months before or after day of visit	HBA1C
Comments		

Adapted from Artiga and Hinton (2018).

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