

COMMENT



Where standardized meets personalized when integrating social determinants of health into the electronic health record

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Given that the majority of health outcomes are due to the context in which patients live, achieving optimal outcomes and reducing health disparities requires identification of and timely response to social determinants of health (SDoH), as part of the clinical encounter. Electronic health records (EHRs) are often considered a major tool to reach this goal. In 2009, the American Reinvestment and Recovery Act (ARRA) enacted the Health Information Technology for Economic and Clinical Health Act (HITECH) that embraced a focus on health equity through the meaningful use of EHRs. Since HITECH's establishment, the rate of adoption of EHRs jumped from 3.2% in 2008 to 14.2% in 2015. By 2017, 86% of office-based physicians and 96% of nonfederal acute care hospitals were using certified EHRs.¹ The use and capabilities of EHRs have rapidly changed over the past few decades, from digital pathology allowing for storage and transfer of images to improved clinical decision support. It isn't yet clear if and how EHRs could be used to facilitate screening and response to SDoH as part of the clinical encounter. To begin this exploration, it is important to understand how healthcare systems currently use EHRs to capture and address SDoH.

The Meaningful Use program, borne from HITECH under the Department of Health and Human Services, created a set of benchmarks rolled out in three stages that determined the pace of implementation and utilization of EHRs. Stage 1, initiated in 2011, established general requirements for capturing and sharing clinical data. Stage 2, introduced in 2014, focused on using EHRs to advance clinical processes. Stage 3, launched in 2017, aimed to improve health outcomes.² Prior to Stage 3 release, the Center for Medicare and Medicaid Services charged the National Academy of Medicine (NAM) to convene a committee of experts to “identify domains and measures that capture the SDoH to inform the development of recommendations for Stage 3 Meaningful Use of EHRs.”³

Despite widespread agreement on the need to capture SDoH in the EHR, there are currently no standardized methods nor established criteria for doing so. Guided by the recommendations of NAM, three common social risk screening tools developed in the past decade include the Health Leads Social Needs Screening Toolkit, the Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences (PRAPARE), and the Accountable Health Communities Screening Tool (AHCS).^{4–6} While there is some overlap in the domains targeted by these three tools, differences exist based on each tool's intended use. The Health Leads screener is a widely used instrument intended

for most clinical settings. This tool focuses on the domains of food insecurity, utility needs, housing instability, childcare, financial resource strain, transportation challenges, health literacy, and social isolation.⁴ PRAPARE, on the other hand, was created with community health center (CHC) patient populations in mind. While this tool highlights the core domains targeted by Health Leads, PRAPARE also features questions on race/ethnicity, language preference, veteran status, farmworker status, incarceration history, refugee status, and insurance status.⁵ AHCS prioritizes cost-effectiveness and was designed to be short and easily incorporated into clinical workflows. Therefore, this tool only emphasizes those domains that can be addressed through community services, including housing instability, food insecurity, transportation needs, utility needs, and interpersonal safety.⁶ In addition, significant differences arise when examining the specific questions used in each. For example, with respect to housing instability, Health Leads asks, “Are you worried that in the next 2 months you may not have stable housing?” PRAPARE asks, “What is your housing situation today?” Lastly, AHCS asks about problems with bug infestation, mold, lead, and other housing-related issues. While each question holds merit in identifying a particular aspect of one social need, they also lack consistency. A negative response, or no need identified, to one question does not necessarily correlate with negative responses to the others. This hinders communication between healthcare systems using different tools and leads to incomplete assessments of patient needs. Creating standardized questions with an emphasis on actionability for a common set of domains may help healthcare systems identify needed structures (community partnerships, social work, and referral programs) that can consistently and rapidly respond to positive screens.

Healthcare systems can also create personalized SDoH screening tools based on stakeholder feedback. Gold et al. described an iterative process for creating an EHR-based SDoH collection tool that draws from the NAM guidelines and the PRAPARE screening tool, but also relies on consultation with clinic staff to adapt to CHC patients and local resources.⁷ Some of the final questions selected drew from validated sources, such as the Household Food Security Survey; some introduced slight modifications to NAM-recommended questions, while others were developed de novo by stakeholders.⁷ Similarly, Beck et al. described a social health template embedded in the EHR at Pediatric Primary Care Center at Cincinnati Children's Hospital that draws from multiple

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sources.⁸ These examples highlight that the current state of capturing SDoH data in EHRs varies considerably.

It is important to pause and ask if standardization is the ultimate goal when patients' contexts vary considerably. Serving unique patient populations requires a certain degree of flexibility. However, using EHRs to standardize the screening process could create supportive systems to more consistently assess SDoH in the clinical context, and even allow for interoperable systems that could link responses to these questions to appropriate resources. In 2019, Johns Hopkins reported the rollout of an Epic tool termed the SDoH Wheel, which provides a distinct place in the EHR to collect information on several domains: financial resource strain, transportation needs, alcohol use, depression, intimate partner violence, social connections, physical activity, tobacco use, stress, and food insecurity.⁹ Based on a patient's answers to social health questions, The Wheel visually depicts a patient's risk and links to Aunt Bertha, a community resource site that clinicians and patients can easily navigate to find assistance for each domain need. This illustrates one model for utilizing EHRs to reliably identify those patients at risk for adverse SDoH and to facilitate a timely response.

However, widespread adoption of EHR-based SDoH tools, such as these, requires clarity about integrating SDoH assessment into clinic flow and how healthcare systems can practically respond within the context of the specific system and local community resources. Gold et al. described how referral processes varied across CHCs depending on the particular clinic workflow and clinic or community resources. One CHC referred patients to community services via a tool that linked SDoH-related diagnosis codes to local resources. Others made mostly internal referrals to community health workers. Unfortunately, referral processes can become overwhelmed, due to a high positive screening rate; and some patients rejected assistance with social needs when offered.⁷ Investigation into if and how patients prefer to be screened and connected to resources is limited. Polk et al. illustrated one such approach. At participating clinics, patients are screened using a survey integrated into the EHR. Clinicians then review the results of the survey with these families and connect them to "advocates," who then conduct a more thorough SDoH assessment, as desired. Based on the responses, patients may be offered childcare enrollment assistance, job placement services, utilities shut off protection, and more. Information on successful or unsuccessful social needs assistance and resource connection are then collected in an electronic database, and discussed at the following clinic visit.¹⁰

As EHR vendors and healthcare systems strive to identify new and useful functionality for EHRs, capturing SDoH should be at the forefront. An emphasis on SDoH may lead to more nuanced treatment plans, expedite community resource referrals, improve patient outcomes, and reduce health disparities. However, screening and referral processes must include patient input and community context. This makes a universal approach impractical. We should instead focus on how to use EHRs to facilitate a response to positive screens and to track resource referrals, and alleviation of social risk needs over time. Healthcare systems and EHR vendors, with input from patients, community stakeholders and providers, should aim to create a resource connection tool in the EHR that can be contextualized to the patient's location. Like the Epic SDoH Wheel, this tool could provide links to local community resources but should also allow for seamless communication, with social workers and community partners when a specific need is identified, while ensuring patient privacy. In this way, healthcare providers can follow up on the success or failure

of SDoH assistance and adjust recommendations or treatment plans accordingly. The healthcare setting itself can neither solve the social challenges faced by our patients nor ignore them. We need to more effectively identify addressable SDoH and efficiently screen and connect to existing resources. Guided by patient preferences and the healthcare system's capabilities, the EHR is one of those tools that can catapult us forward if used judiciously.

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