



## CHALLENGES AND STRATEGIES IN INTEGRATING SOCIAL DETERMINANTS OF HEALTH DATA INTO COMPREHENSIVE MEDICAL RECORDS

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### Abstract

With the increasing emphasis on population health in healthcare, healthcare practitioners are recognizing that data beyond conventional clinical results may provide a more comprehensive understanding of the factors influencing a patient's health condition. This data can also help discover strategies to enhance the efficacy of therapy. Nevertheless, there are still other obstacles that need to be overcome in order to make data pertaining to social aspects of health, such as living circumstances and levels of education, as accessible and usable as medical data. The main obstacles include the absence of agreement on standards for recording or indicating social variables of health in electronic health records, as well as a lack of evidence demonstrating the effectiveness of addressing social determinants through referrals or other action tools once the information has been collected. In order to tackle these difficulties and efficiently utilize social determinants in healthcare environments, we propose the establishment of nationwide guidelines for representing data pertaining to social determinants of health in electronic health records. Additionally, we suggest providing incentives, either financial or based on quality, to encourage the collection of such data. Furthermore, we recommend expanding the scope of research that assesses the consequences of acting upon the gathered information.

**Keywords:** Social determinants, electronic health records, guidelines, review, strategies, challenges.

### 1. Introduction

Social determinants of health refer to the intricate and interconnected social structures and economic systems that primarily contribute to health disparities. These determinants include the social environment, physical environment, health services, and many structural and societal elements.<sup>1</sup> Social determinants can be categorized into two main groups: individual-level determinants that are specific to a patient, such as their education level, employment status, or housing situation; and community-level determinants, which assess environmental,



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neighborhood, or socioeconomic characteristics (such as air pollution levels, housing quality, and the unemployment rate) that impact a large population.<sup>2,3</sup> Various studies have shown that both individual and community-level socioeconomic factors that influence health have an impact on various health outcomes in different populations and age groups.<sup>4-8</sup> Furthermore, with the rise of accountable care organizations (ACOs) and the shift towards value-based reimbursement for treatment, many health care systems have made it a priority to address these factors.

Simultaneously with an increased emphasis on the importance of socioeconomic determinants of health in healthcare, there has been growing interest in the advantages of using electronic health records (EHRs) for monitoring the health of whole communities, rather than simply individual patients. Several healthcare systems are now investigating methods to include data about socioeconomic factors into patients' clinical records.<sup>9, 10</sup> The Medicaid and CHIP Payment and Access Commission's Delivery System Reform Incentive Payment Program is offering significant financial incentives to expand the focus on social determinants of health to a wider range of healthcare providers. This program aims to fundamentally transform state Medicaid programs by bringing attention to social determinants beyond the traditional focus on community health centers and safety-net providers. In response to this specific need, electronic health record (EHR) suppliers have initiated the development of novel technologies to effectively capture and address the factors that influence health outcomes, and use them for the purpose of managing the health of whole populations. Some examples of these platforms include Cerner's HealtheIntent<sup>11</sup> and Epic's Healthy Planet.<sup>12</sup>

Despite being intended to tackle a range of interconnected problems concerning social determinants, these EHR tools, along with others, lack a comprehensive strategy or set of standards to guarantee seamless exchange of data between different systems or its usability by other healthcare providers, patients, or social service organizations.<sup>13-15</sup> There are still some problems that need to be addressed before data about the determinants become easily available and are effectively integrated, similar to laboratory findings or vital signs. This article discusses the precise technological and practical issues that need to be resolved in order to effectively incorporate the social determinants into electronic health records (EHRs) on a large scale. Additionally, it presents many viable legislative solutions.

## 2. Technical Challenges

In 2014, the Institute of Medicine released two papers that provided suggestions for the selection of social and behavioral-related metrics for data gathering in electronic health records (EHRs).<sup>13,14</sup> Nevertheless, there is still a lack of agreement on the specific metrics that should be included in electronic health record (EHR) systems. Data on individual-level determinants are presently gathered through diverse instruments, such as the Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences (PRAPARE), the Accountable Health Communities Screening (AHCS) tool, and numerous locally developed tools from various organizations. Some of these tools are specifically designed for use with particular

populations.<sup>15-18</sup> Aside from elements that pertain to individuals, institutions are also interested in collecting data on aspects that pertain to the community as a whole. This is because such data is valuable in anticipating health risks, such as the probability of surviving a cardiac arrest that occurs outside of a hospital setting.<sup>19</sup>

### **3. Implementation Issues**

Data about community-level factors, such as poverty, unemployment, and air pollution rates, may often be obtained as organized information from the Census Bureau or other relevant authorities. This information has the capacity to be smoothly connected to electronic health record (EHR) data without causing any interruption to the clinical process, provided that the patients' addresses are correct and geocoded. HealthLandscape<sup>9</sup> and other geospatial analytic companies, together with the Factors Affecting Communities and Enabling Targeted Services (FACETS) database have adopted the strategy of connecting community data with electronic health record (EHR) data. This method enables healthcare practitioners to access community data instantly by transmitting a patient's address from the electronic health record (EHR) to the database via a web service.<sup>20-23</sup>

Providers often have a lower degree of urgency to be aware of community-level factors during a specific clinical interaction.<sup>24</sup> However, the existence of these factors may encourage providers to screen patients who are at risk for social needs. Community-level factors may also be beneficial at the system level to improve the effectiveness of prediction models or focus on particular initiatives.<sup>18, 25.</sup> They also attract the attention of academics who want to get a deeper understanding of how community context influences health outcomes, as well as policy makers who aim to develop strategies to tackle these factors.

On the other hand, gathering data on factors that affect individuals is more difficult, since it often requires clinics to collect information via screening checklists or questionnaires when patients seek therapy. Moreover, factors that influence individuals at a personal level might undergo rapid changes, especially when patients are effectively directed to get necessary assistance.

### **4. Policy Implications**

Before incorporating data on socioeconomic determinants of health into an EHR, an institution must first consider the necessary steps to effectively address these variables once the data is obtained. To effectively address the factors influencing outcomes in the clinical context, it is necessary to enhance the existing infrastructure and provide a more robust evidence foundation.<sup>26-29</sup> Infrastructure facilitates duties such as directing patients to community services, monitoring the outcomes of these referrals, managing up-to-date lists of community service providers, and updating patients' evaluations of service providers' quality.<sup>30</sup> Various vendors, such as Healthify<sup>31</sup> and NowPow<sup>32</sup>, have developed comprehensive online platforms to connect patients with services. These platforms include a curated list of community service

providers, integration with electronic health record (EHR) systems, and communication tools that facilitate the completion of referrals between community services and medical providers. Ultimately, however, more expenditures in people and technology at the clinic level are necessary to fully achieve the advantages of these instruments.

Research has shown that information pertaining to socioeconomic determinants of health may enhance prognostic models and provide a more comprehensive comprehension of a patient's living circumstances. However, further compelling data is required to establish a direct correlation between referrals to community services and improved clinical results, since these referrals play a crucial role in addressing patients' social needs. At present, the assessment criteria for referral programs that include socioeconomic determinants mostly concentrate on process metrics, such as the quantity of patients sent to particular services or the fulfillment of regulatory requirements for referrals. However, the majority of awards in the age of responsible care are determined by the enhancement of clinical outcomes and the reduction of expenditures.<sup>34</sup>

Attempts to enhance social circumstances without concrete proof of their connection to medical advancements may not meet the standards set by payers. Implementing standardized reimbursement criteria for CPT codes (or CPT modifiers) associated with screening for or addressing social determinants of health, or including social determinants of health in risk-adjustment models, can offer both incentives and resources to integrate these determinants into clinical care. This approach also helps to improve the evidence base, allowing for a better understanding of the effectiveness of interventions. In order to establish a solid foundation of evidence, it is necessary to have a research plan that specifically examines the assessment of both the implementation and the results.<sup>35</sup>

## 5. Conclusion

The extensive incorporation of data pertaining to social determinants of health into electronic health records presents significant opportunities for enhanced care and well-being. This includes gaining a deeper comprehension of the impact of neighborhood attributes on health, establishing stronger links between medical care providers and community services, and the ability to address the comprehensive needs of patients. To systematically gather data on the determinants, it is crucial to first expand or modify current standards to effectively capture the data and ensure that EHR suppliers can easily embrace these standards. Additional objectives include reconfiguring the responsibilities of clinical staff members to effectively connect patients with community resources and performing thorough research to assess the health and social consequences of referral initiatives. Only by implementing these measures will we be able to accomplish the objective of enhancing outcomes for both individual patients and larger groups.

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