Tehreem Rehman

Unaddressed social determinants of health (SDOH) are estimated to produce up to $5 trillion of preventable healthcare costs in 2028.[1] Yet, less than one-third of hospitals engage in any screening for social needs, let alone use validated SDOH tools.[2] Several validated tools have recently been released through standard-setting organizations such as the Center for Medicare and Medicaid Innovation and the National Association of Community Health Centers.[3] [4] **However, there remains a gap in research on the impact of interdisciplinary stakeholder engagement and operationalization of a standardized SDOH tool on successful screenings and resource referrals given at hospitals.** This is a critical gap as the existing limited use of validated SDOH tools at hospitals precludes further research, risk stratification, design of targeted interventions, and ability to measure impact on healthcare costs and outcomes overall.

Practicing on the frontlines of healthcare for all regardless of ability to pay and at the nexus of interdisciplinary care, the emergency department (ED) is the ideal setting to employ standardized SDOH tools. Our long-term goal is to eliminate low-value care stemming from inadequately addressed SDOH at the hospital. We intend to demonstrate efficient identification of patients with addressable SDOH to facilitate effective delivery of social need interventions in the ED**. Our central hypothesis is that a standardized screening tool can effectively be operationalized into existing ED clinical workflows to improve SDOH identification and future interventions.** The rationale for the proposal is that capture of SDOH data and resource referrals will be increasingly incentivized, such as with the recent CMS proposed quality measures.[5] [6] We plan to test our central hypothesis by way of the following specific aims.

Aim 1a: Operationalize use of the PRAPARE tool[7], a standardized and validated screening tool into our hospital's electronic health record (EHR) interface. Primary outcomes will be process measures including time to educate staff on using the tool, fidelity to the tool in evaluations as measured by percent completion of the entire tool, percentage of evaluations linked to at least one SDOH-related ICD-10 Z code in the patient encounter, and percentage of evaluations linked to at least one resource referral.

Hypothesis: Interdisciplinary stakeholder engagement with social work and case management providers will be necessary to successfully leverage existing EHR infrastructure and implement the PRAPARE tool in our ED setting.

Data analysis: Process measures will be analyzed looking at mean and median of time and percentage values.

Implications: Engagement with interdisciplinary partners in the ED will foster knowledge exchange to optimize scope of practice and efficiency in ED workflow. The primary outcomes will inform development of ED-specific guidance on best practices for training and operations as existing guidance focuses on ambulatory settings. As part of the operationalization of the PRAPARE tool into our EHR, we will build a Microsoft PowerBI data dashboard to help track, analyze, and display data collected by the tool. This will enable the capture of SDOH burden in our patient population, facilitate risk stratification, and help identify existing gaps in resources to adequately address social needs in the ED. Collected data through this dashboard will be examined in future studies.

Additionally, automating the process of ICD-10 Z codes on SDOH through operationalization of the PRAPARE tool in our ED has multiple significant implications. Use of ICD-10 Z codes allows capture of SDOH burden in a standardized manner to facilitate interoperability of collected information. This information can in turn be used to clarify costs associated with care of patients with social needs as part of the growing push towards value-based reimbursement. Automated coding also reduces provider documentation burden, which has been strongly associated with burnout.

Aim 1b: Assess impact of use of the PRAPARE tool on ED workflow and throughput. Primary outcomes will be time required to complete SDOH evaluations with patients, patient length of stay in the ED, and number of screened patients over ED volume.

***Hypothesis*:** Implementation of the PRAPARE tool will not cause a significant increase in time spent in SDOH evaluations with patients or overall patient length of stay in the ED.

***Data analysis*:** Interrupted time series models will be utilized to analyze the impact of implementing the PRAPARE tool on ED throughput. These models will be further stratified based on patients' social need scores as derived from the PRAPARE tool responses.

***Implications*:** Although our study will target a university-based ED, we are part of a larger health system that includes other community hospital-based EDs and freestanding EDs. Our health system is invested in leveraging our success and expanding this SDOH operational initiative across our system to over twenty other EDs.