COMMENTARY

Advancing Social Prescribing with Implementation Science

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A wealth of emerging evidence on the associations between social determinants of health (SDH) (eg, food, housing, transportation, and education) and health outcomes[1–7] has fueled a wave of experimentation around identifying and addressing patients' SDH in the context of clinical care.[8] The Centers for Medicare and Medicaid Services, the Centers for Disease Control and Prevention, and the National Academy of Medicine have recommended that high-quality primary care includes documentation of a core set of SDH measures, ideally in electronic health records (EHRs).[9–12] Due in part to these recommendations, several health sector leaders have developed tools for identifying patients' SDH needs, using validated measures as available (Appendix).[13,14] These social needs screening tools are now being used to inform clinical interventions, including providing social and economic resources on-site (eg, food boxes) or connecting patients with off-site community-based resources (eg, food banks). Collectively, SDH-focused interventions undertaken in medical settings have been referred to as "social prescribing."[15]

In the United States, much of the experimentation around social prescribing takes place in community health centers[16,17] where there is a historic precedent for addressing social and economic needs as a core part of primary care.[18] The Health Resources and Services Administration Bureau of Primary Care requires that federally-qualified health centers provide some services under the umbrella of SDH, such as translation and transportation services that may help to address SDH-related barriers to care. These kinds of activities are expanding under new federal and state programs that leverage value-based payment models to incentivize more comprehensive, coordinated care, especially for high-risk beneficiaries. For instance, provision 2703 of the Affordable Care Act created an optional Medicaid State Plan benefit to support beneficiaries with chronic diseases[19]; the federal Comprehensive Primary Care+ (CPC+) demonstration project similarly includes a range of value-based payment incentives for improved care management and coordination.[20] These models support primary care strategies that connect patients with nonclinical social services in addition to coordinating primary, acute, and behavioral health care services.

Despite growing interest in social prescribing, major evidence gaps persist in 2 key areas. First, although findings from some evaluations of SDH-related interventions suggest that specific programs can decrease social needs and improve health[21–24], relatively little research addresses the impacts of social prescribing initiatives on patient and provider experience of care, health outcomes, health care costs, and utilization.[25] Ideally, gaps in effectiveness research will be filled through federal demonstration project evaluations, including evaluations of Health Homes[19], CPC+, and the newly launched Accountable Health Communities Program[14], to the extent that social prescribing com-

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ponents can be distinguished from other care model components.[25]

As the effectiveness research grows in this field, a second major gap in research will become increasingly relevant to practitioners. This gap involves the evidence base on implementation strategies[26] needed to put these interventions into practice and take them to scale in diverse settings. The rapid proliferation of social prescribing activities in the United States provides an important opportunity for implementation research in this area. This article highlights 3 areas where relevant implementation research is needed and examples of the types of research that could help fill these key evidence gaps (Table 1).

Opportunities for Implementation Science on Social Prescribing

Social Screening Research

Research is needed on the acceptability of social needs screening in the context of medical care, differences between tools used for capturing information on social needs, and ways that such tools can be adapted to optimize screening uptake in different settings and with different patient populations. New screening initiatives are multiplying around the country and provide ripe opportunities for this research. For example, the National Association of Community Health Centers and other partners have developed a screening tool (PRAPARE) that can help community health centers and other providers collect patients' SDH information. Building on PRAPARE, the nonprofit health care innovation center OCHIN is collaborating with the Kaiser Permanente NW Center for Health Research to study the implementation and use of PRAPARE and other EHR-based tools. (Table 1)

Workforce Research

Research is also needed on the workforce models that are most feasible and effective to carry out these activities in different settings. Models for social prescribing activities have included both clinical and nonclinical staff, including nurse and social worker case managers[36,37], student volunteers[38], community care coordinators[39], and community health workers.[40,41] Evidence is needed to better understand the benefits of different workforce models in different settings, identify core training and certification standards across programs, compare implementation strategies within these intervention models, and examine methods to retain and advance nonclinical staff. In one promising example of workforce implementation science, researchers at the University of Pennsylvania have explored strategies to adapt inpatient community health worker programs to outpatient settings. (Table 1)

Payment Models

Research could also assess how payment models can be structured to incentivize or otherwise support the adoption and spread of social prescribing programs.[42] These models include federal programs such as CPC+, Health Homes, and Accountable Health Communities, and state/regional programs, including alternative payment methodology demonstrations focused on community health centers[43], state Medicaid SDH risk adjustment initiatives[44], and some Medicaid waiver demonstrations.[37] These programs offer both site-specific and cross-site opportunities to explore which models can catalyze and sustain social prescribing activities, including the workforce and technologic infrastructure needed for intersectoral work. Hennepin Health's payment model, for example, incorporates risk-sharing strategies between participating entities and the reinvestment of annual cost savings into new social prescribing interventions. Together, these have enabled more workforce and data-sharing innovations. Implementation research on this project is ongoing, focused on the impact and sustainability of the interventions developed through reinvestment and on how this model could be replicated in other settings.[35] (Table 1)

Looking to the Future

Given the mounting evidence linking SDH and health, health care delivery systems must ask what their roles are in identifying and addressing patients' social and economic needs. The growth of social prescribing pilot programs across the United States can and should be leveraged to explore this looming question. Studies of effectiveness, however, are both necessary and insufficient; they must be aligned with and followed by implementation research that examines program feasibility, including whether and how social prescribing activities can be implemented, disseminated, and sustained in real-world clinical settings. This research should address questions such as (1) which social screening tools are most appropriate for which settings, (2) which implementation approaches maximize adoption, (3)

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Table 1. Examples of Promising Social Prescribing Implementation Research

	Program Description	Research Opportunity	Findings	Next Steps
Screening Tools Research	The Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences (PRAPARE) is a national effort to help community health centers (CHCs) and other providers collect data needed to better understand and act on patients' social determinants of health. The PRAPARE assessment tool consists of a set of national core measures as well as a set of optional measures for community priorities. It was informed by research, the experience of existing social risk assessments, and stakeholder engagement. PRAPARE electronic health record templates have been developed in 4 EHR systems, including eClinicalWorks, Epic, GE Centricity, and NextGen.	As the pilot site for the Epic version of the PRAPARE tools, the OCHIN research team collaborated with the Kaiser Permanente NW Center for Health Research to leverage this innovative screening pilot in order to examine how to best use electronic health records (EHRs) to support point-of-care applications for social determinants of health (SDH) information. With support from the National Institutes of Diabetes and Digestive and Kidney Diseases, the research team engaged CHC stakeholders to refine the PRAPARE social needs assessment and develop a suite of EHR-based tools for collecting and presenting SDH information and facilitating referrals to community-resources to address identified needs.[27] The resulting tools were made available to 440 CHCs in 18 states who use the centrally hosted OCHIN Epic EHR. The team conducted qualitative interviews and site visits in 3 pilot clinics to understand barriers and facilitators to the uptake and use of the tools.	Pilot clinics screened over 1000 patients during the 2-y study period. As expected, most patients had at least one identified need. Per the recommendation of our pilot clinics, the team added a question to the screening tool asking whether the patient would like help with any of the identified needs, and if so, what kind of help they would like (eg, follow-up call from a community health worker or written information on community resources). This helped clinics prioritize patients needing follow-up. Clinics identified the need for standardized ways to code SDH data in the EHR and additional tools (eg, tablets) that would enable patients to answer the questions themselves. Another challenge was accessing up-to-date information on community resources where providers could refer patients with identified needs.	OCHIN and Kaiser Permanente NW Center for Health Research are collaborating on a 5-y National Institutes of Diabetes and Digestive and Kidney Diseases -funded research project to test a set of implementation strategies for helping CHCs routinely identify and take action on the SDH-related needs of patients with/at risk for Diabetes mellitus. The researchers will conduct a pragmatic, stepped-wedge, cluster-randomized trial in 30 CHCs to evaluate the impact of a set of scalable implementation strategies (the "SDH Action Plan") known to support clinical practice changes on CHCs' adoption of SDH data collection and action.
Workforce Research	University of Pennsylvania researchers developed an inpatient community health worker (CHW) program called Individualized Management for Patient-Centered Targets Transitions.	Having defined an evidence-based CHW intervention in an inpatient hospital setting, researchers applied Goldstein's framework[28] for adapting evidence-based interventions in order to adjust the CHW intervention for implementation with a new population: outpatients with multiple chronic conditions. The goal was to retain the CHW intervention's core components of effectiveness and allow for efficiencies of scale. The team conducted in-person qualitative interviews and applied findings in a design-mapping process to refine the intervention protocol.	Revisions were made to the intervention's core components to address the main differences that arose between the original intervention and the needs of patients with chronic diseases in the new setting. These included changes based on outpatients' interests in focusing on one goal at a time, requests for chronic disease management support in addition to social supports, and outpatients' requests for more longitudinal supports.[29]	As a result of the implementation research undertaken to adapt the intervention to a new setting, the research team was able to launch both single- and multi-center randomized controlled trials (RCTs) to test the effectiveness of the new intervention.[30,31] Combined, these studies led to the creation of the Penn Center for CHWs. The center is supported by Penn Medicine's operational dollars and now delivers the CHW intervention to more than 2000 patients annually.[32]

Continued

Table 1. Continued

	Program Description	Research Opportunity	Findings	Next Steps
Payment Model Research	In 2012, Hennepin Health, a county-based safety-net accountable care organization in Minneapolis, launched as a partnership between a level I trauma center, a federally-qualified health center, a county health department, and a nonprofit health maintenance organization serving the county's Medicaid beneficiaries.[33] A financial risk-sharing agreement across all 4 organizations has enabled activities that support social prescribing in Hennepin Health, including medical and social data sharing in the EHR, referrals to social services, and deployment of CHWs.	The capitated and financial risk-sharing payment model has enabled social prescribing services (eg, referrals to county social services and community support groups) and expanded the workforce focused on social prescribing (eg, care coordinators, CHWs and housing and social service navigators). Cost savings at the end of each year are reinvested into the program, focusing on workforce-focused interventions. Hennepin Health examined the impact of the program and these interventions on over 9000 adults enrolled from 2012 to 2014.[33]	Analyses show that over 300 enrollees have been housed in 3 y,[34] and participants have experienced fewer Emergency Department (ED) visits, improved quality of chronic disease care, and an 87% satisfaction rating with health care services.[32] The qualitative analyses document improved patient perceived quality of life, with enrollees highlighting improved social service support and care coordination among key contributors.[35]	Research is ongoing to track triple aim outcomes and qualitative data to better understand valued components of the program and lessons for replication.

how health information technology could facilitate social screening and community resource linkages, (4) how different workforce models could be leveraged in diverse clinical contexts, and (5) how federal, state, and local payment models can support social prescribing activities over time.

The implementation research examples highlighted here provide insights into how implementation science can support social prescribing's transition from innovative pilot work to sustainable primary care practice. Many other opportunities exist for new research to be conducted in this rapidly evolving field. Advancing such research will require a sustained commitment from many stakeholders, including innovators, health professional organizations, and agencies focused on developing health care standardization and improving quality. Capitalizing on existing practice-based experiments will also require strong research-practice partnerships, which can be facilitated through practice-based research networks with expertise in practice-based methodologies.[45] The Agency for Health Care Research and Quality has been a strong supporter of such implementation science in primary care.[46] Recent threats to their budget and overall sustainability directly conflict with this implementation research agenda.[47–50] Primary care providers and researchers investing in SDH work will need sufficient funding to ensure that the rigorous implementation science needed can prosper in this nascent field.

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Appendix. Examples of Social and Economic Risk Screening Tools

Social and Economic Risk Screening Tool	Recommended Social and Behavioral Domains and Measures for Electronic Health Records[9]	PRAPARE: Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences[13]	Accountable Health Communities Screening Tool[14]
Total number of questions	24	21	10
Domain			
Residential address	●	●	
Race/ethnicity	●	●	
Alcohol Use	●		
Tobacco use and exposure	●		
Depression	●		
Education	●	●	
Financial resource strain, sverall	●		
Household income		●	
Household size		●	
Housing		●	●
Food		●	●
Clothing		●	
Utilities (phone, gas, electric)		●	●
Medicine/health care		●	
Child care		●	
Transportation		●	●
Neighborhood safety		●*	
Interpersonal violence/safety	●	●*	●
Physical activity	●		
Social connections/isolation	●	●	
Stress	●	●	
Migrant/seasonal farmworker		●	
Veteran status		●	
Primary language		●	
Incarceration history		●*	
Refugee status		●*	
Insurance status		●	

*Optional question in Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences (PRAPARE).