THE MILBANK QUARTERLY
A MULTIDISCIPLINARY JOURNAL OF POPULATION HEALTH AND HEALTH POLICY

Perspective

Revising the Logic Model Behind Health Care's Social Care Investments

LAURA M. GOTTLIEB,[*,†] DANIELLE HESSLER,[*,†] HOLLY WING,[†] ALEJANDRA GONZALEZ-ROCHA,[†] YURI CARTIER,[†] and CAROLINE FICHTENBERG[*,†]

[*]*University of California, San Francisco ;* [†]*Social Interventions Research and Evaluation Network, Center for Health and Community, University of California, San Francisco*

Policy Points:

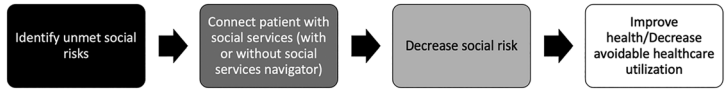
- This article summarizes recent evidence on how increased awareness of patients' social conditions in the health care sector may influence health and health care utilization outcomes.
- Using this evidence, we propose a more expansive logic model to explain the impacts of social care programs and inform future social care program investments and evaluations.

Keywords: framework, logic model, social determinants of health, social care.

Over the last decade, health care sector activities related to identifying and addressing patients' social drivers of health have graduated from being innovative and leading-edge practices to being norms and expectations. Key examples include policies from health care payers and professional standard–setting organizations—including the Centers for Medicare and Medicaid Services (CMS), the National Committee for Quality Assurance, and The Joint Commission—signaling that standardized social risk screening and, in some cases, navigation to social services, are now considered a basic standard of care.[1] The emergence of these and other state and federal health care standards, regulations, and quality measures related to social drivers of health[2] stems from strong and compelling evidence linking social adversity with poor health outcomes[3–8] and increasingly lever-

The Milbank Quarterly, Vol. 00, No. 0, 2024 (pp. 1-11)

Figure 1. Simplified Outcomes from Addressing Social Determinants of Health in Systems (OASIS) Logic Model[11]



ages the health care sector's adoption of value-based payment models that reward quality over quantity of services.[9,10]

The shared logic model behind these "social care" policies and the many programs they have spawned is that screening for social risk factors (e.g., food, housing, or transportation insecurity) and referring patients who endorse social risks to social services is that patients experiencing social barriers to health promotion and disease management will receive social services and that those services will help patients reduce or resolve social needs. From there, the assumption is that any changes in patients' social needs will in turn contribute to improved health. This logic was well-summarized in a 2020 framework published by Gurewich and colleagues (Figure 1).[11]

Though this logic model has served as the foundation for a growing number of research studies and even multiple reviews that examine whether and when social care interventions improve health outcomes and decrease avoidable and costly health care utilization,[12–32] the evidence supporting the different components of this pathway is not yet robust. An intriguing finding across a growing number of social care studies is that these programs influence health and health care utilization through multiple mechanisms—not solely through connections to social services. In this paper, we summarize the growing evidence about different explanatory pathways. We then apply that evidence to expand the foundational logic model behind social care programs with the goal of informing future program investments and strengthening future program evaluations.

Reducing the Burden of Social Risks

The logic of reducing the burden of social risks to improve health is intuitively compelling. A handful of studies provide evidence to support this logic by examining both intermediate social risk outcomes as well as more long-term health and health care outcomes of social risk interventions. For instance, a highly cited early study on the volunteer navigator program Health Leads showed improvements in lipid levels and blood pressure in intervention participants[33]; the same team subsequently

used qualitative data to suggest that access to, adequacy of, and satisfaction with social resources mediated the clinical biomarker responses.[34] A more recent pair of studies examining the impacts of a social services navigation program for socially and medically complex adults in California found significant reductions in hospital utilization in patients receiving navigation supports.[35] In that case, subsequent qualitative work indicated that navigators did help patients obtain social services, in part through knowledge transfer about available resources but also by activating formal and informal support networks to facilitate connections and decrease other barriers to social services access.[36]

In contrast to the qualitative work supporting the logic of improved health through reduced social needs, quantitative research has found health effects are not unambiguously mediated by social services connections or changes in social risk. A randomized controlled trial (RCT) examining both pediatric primary and urgent care–based social services navigation program showed that although the intervention was associated with both decreases in social risks and improvements in health, improvements in parent-reported child health outcomes were *not* mediated by changes in families' social risks[37]; in a smaller urgent care subsample, the changes in child health were only partially mediated by changes in social risk.[38] Similarly, a primary care diabetes program that aimed to link adult patients who reported social risks with social services showed a decrease in reported social risks and hemoglobin A1c, but changes in hemoglobin A1c were not mediated by the changes in social risk.[39,40]

Perhaps the most dramatic example challenging the idea that connections to social services themselves consistently lead to changes in health is the evaluation of the largest US government–funded evaluation of health care–based navigation services—the Accountable Health Communities demonstration from the CMS Innovation Center, which began in 2017 and included 29 sites across the United States. In 2023, the evaluation team reported significant impacts of the navigation intervention on improving beneficiary health and decreasing avoidable health care utilization but found no differences between trial arms in connections to social services or beneficiaries' social risks.[41]

Alternative Pathways

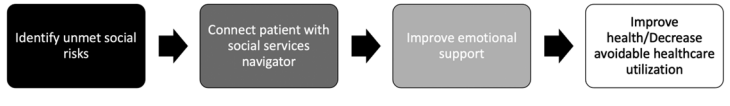
These studies together suggest that social risk screening and navigation initiatives can influence health and utilization outcomes, but those outcomes are not solely the result of increased access to social services and reductions in social risk. One possibility is that the existing studies are capturing insufficient information about patients' social risks and are therefore missing key intermediate outcomes, but the consistency of this finding across several studies suggests alternative pathways to changes

in health are also likely. A closer look at recent research highlights possible multiple complementary mechanisms.

Emotional Support/Healing Relationships Pathway

Several recent social care studies have suggested that connections to social service navigators may influence participants' emotional well-being, regardless of whether those connections lead to receipt of social services or changes in participants' social risks. In interviews with patients and case managers exploring the impacts of the California-based social services navigation program mentioned above, researchers found that patients who engaged with navigators felt cared for and emotionally supported.[36] These feelings in turn led to improvements in participants' psychological well-being and mental health symptom management. A similar finding was reported in qualitative research exploring the mechanisms explaining the impacts of the pediatrics primary care– and urgent care–based navigation program described above.[42] The investigators reported that adult caregivers of pediatric patients felt less socially isolated after participating in the navigation program, regardless of whether the program ultimately helped caregivers to connect with social services. Similarly, studies of community health workers (CHWs) have shown that patients believe helpful intervention components are not limited to connections to social services but rather include emotional support provided by CHWs.[43] These relatively recent studies are consistent with prior research from the Camden Coalition, which showed that "authentic healing relationships" with navigators contribute to patient motivation, active health management, and changes in individual behaviors.[44] (Figure 2).

Figure 2. Emotional Support/Healing Relationships Pathway



Health Care Services Connections Pathway

Another byproduct of efforts to connect social care program participants with social services may be that these efforts lead patients to forge better connections with clinical health care services, not just with social services. As an example, qualitative work exploring mechanisms behind the impacts of a pediatrics primary and urgent care social services navigation program indicated that in the process of helping adult

Figure 3. Health Care Services Connections Pathway

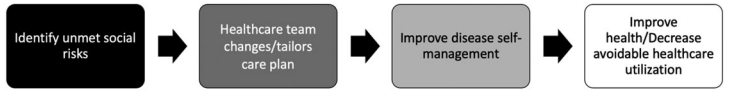
caregivers of pediatric patients address their child's social needs, navigators helped caregivers also prioritize their own health and obtain relevant health services.[42] For instance, navigators provided caregivers with information about health insurance, primary care, dental care, and mental health services. Some participants reported that the navigators also helped participants feel more comfortable accessing those health care services. A similar finding emerged in the qualitative research from the California Medicaid social services navigator program described above.[36] In that work, navigators made both complex social and health services systems feel more accessible to patients. Consistent with that pathway, data from the CMS Innovation Center's Accountable Health Communities project have shown that navigation program participants were more likely to attend posthospitalization outpatient medicine follow-up visits than participants not receiving navigation services.[41] Studies of the standardized CHW intervention Individualized Management for Patient-Centered Targets (IMPaCT) likewise have suggested that one mechanism behind observed changes in health care utilization is that patients working with CHWs shifted utilization from inpatient to outpatient care in part because CHWs helped patients establish patient connections with primary care.[43] (Figure 3).

Tailored Clinical Care Pathway

The 2019 National Academies of Sciences, Engineering, and Medicine report on *Integrating Social Care into the Delivery of Health Care: Moving Upstream to Improve the Nation's Health* suggested that social risk data also may be used by health care teams to support efforts to tailor health care decisions and improve patient-centered care.[45] In that vein, several clinical guidelines underscore the importance of applying information about patients' social risk (e.g., information about housing or incarceration status) to inform care decisions, such as when to test for tuberculosis or offer specific vaccinations.[46–48]

Some recent studies have subsequently indicated that social risk data collected at the point of care can in fact meaningfully influence indicators of care quality. In a qualitative study with clinicians who were provided social risk information about their patients, participants reported that knowing about patients' social risks changed

Figure 4. Tailored Clinical Care Pathway



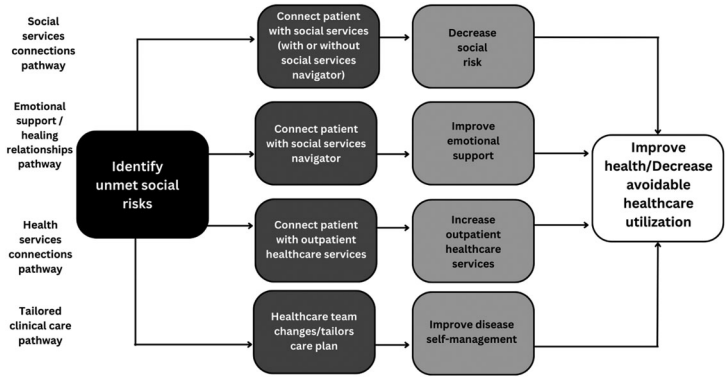
care delivery decisions in 23% of patient encounters and helped improve interactions with and knowledge of the patient in 53% of encounters.[49] The study did not examine subsequent health outcomes, but others have. Weiner and Schwartz have conducted multiple studies on how using social risk information to tailor care (which they refer to as "contextualizing care") can improve health outcomes and decrease avoidable and acute utilization.[50] In an RCT of a primary care CHW program, Kangovi and colleagues found that patients working with primary care–embedded navigators felt that they were receiving higher-quality primary care.[26] The CMS Innovation Center's Accountable Health Communities demonstration evaluation has not examined this pathway; in fact, fewer than one-quarter of the participating sites reported making patients' social risk data available in electronic health records to facilitate data access for members of the clinical team.[41] (Figure 4).

A Comprehensive Conceptual Model for Social Care Interventions

Integrating findings from the growing number of studies on social care interventions leads us to propose a revised, more comprehensive logic model that includes all four pathways—including reduced burden of social risk, emotional support, health care services connections, and tailored clinical care—that appear to mediate the health and health care utilization impacts of social care programs (Figure 5). The pathways are not mutually exclusive and may often be interconnected. For instance, feeling emotionally supported can lead patients to seek more connections with health care services, and those connections can contribute to more tailored care and shared decision making.[44] The intersections between pathways should also be the subject of future research.

Understanding mechanisms through which social care investments impact individuals' downstream health and health care utilization is especially critical in this rapidly evolving (and, at times, controversial[25,51,52]) field of health care services. Evidence about mechanisms can help resolve questions about the benefits of social care when it contributes to changes in social needs and, in contrast, help expose key service gaps (e.g., instances when social services are simply inadequate or when access

Figure 5. Social Interventions Research and Evaluation Network (SIREN)'s Social Care Logic Model



is blocked because of eligibility criteria, waitlists, or administrative burdens). It also can shed light on why social care initiatives sometimes, though not always, can lead to improvements in health even in those instances in which social services resources are insufficient. For instance, in the absence of robust social services, it may be rational to invest in social workers and CHWs whose value is not limited to facilitating social services connections but also includes emotional support, health care services connections, and health education. The capacity of social workers and CHWs to intervene via these multiple pathways may make investments in these health professionals more cost-effective than investments solely focused on one pathway.[53–55] Ensuring that the evidence is available to inform investment decisions, however, will require that program evaluations accurately assess different mediation pathways by collecting data on intermediate process measures.

Health care services research on social care is rapidly maturing. As research in this field evolves, it appears to tell a complex story about why, how, and when different social care initiatives can impact health, including across settings and in subpopulations. Our social care logic model applies this emerging new evidence with the aim of catalyzing and strengthening future practice and policy-relevant social care research. If researchers do their jobs well, this will not be the last logic model developed in the field.

References

1. Gottlieb LM, DeSilvey SC, Fichtenberg C, Bernheim S, Peltz A. Developing national social care standards. *Health Aff (Millwood)*. February 22, 2023. https://doi.org/10.1377/forefront.20230221.857308
2. Whitman A, Lew ND, Chappel A, Aysola V, Zuckerman R, Sommers BD. Addressing social determinants of health: examples of successful evidence-based strategies and current federal efforts. Office of the Assistant Secretary for Planning and Evaluation. April 1, 2022. Accessed January 11, 2024. https://aspe.hhs.gov/reports/sdoh-evidence-review
3. Commission on Social Determinants of Health. *Closing the Gap in a Generation: Health Equity Through Action on the Social Determinants of Health: Final Report of theCommission on Social Determinants of Health*. World Health Organization; 2008.
4. Green H, Fernandez R, MacPhail C. The social determinants of health and health outcomes among adults during the COVID-19 pandemic: a systematic review. *Public Health Nurs*. 2021;38(6):942-952.
5. Hood CM, Gennuso KP, Swain GR, Catlin BB. County health rankings: relationships between determinant factors and health outcomes. *Am J Prev Med*. 2016;50(2):129-135.
6. Marmot M. Health in an unequal world. *Lancet*. 2006;368(9552):2081-2094.
7. Mokdad AH, Marks JS, Stroup DF, Gerberding JL. Actual causes of death in the United States, 2000. *JAMA*. 2004;291(10):1238-1245.
8. Parekh T, Xue H, Cheskin LJ, Cuellar AE. Food insecurity and housing instability as determinants of cardiovascular health outcomes: a systematic review. *Nutr Metab Cardiovasc Dis*. 2022;32(7):1590-1608.
9. Burwell SM. Setting value-based payment goals–HHS efforts to improve U.S. health care. *N Engl J Med*. 2015;372(10):897-899.
10. Milad MA, Murray RC, Navathe AS, Ryan AM. Value-based payment models in the commercial insurance sector: a systematic review. *Health Aff (Millwood)*. 2022;41(4):540-548.
11. Gurewich D, Garg A, Kressin NR. Addressing social determinants of health within healthcare delivery systems: a framework to ground and inform health outcomes. *J Gen Intern Med*. 2020;35(5):1571-1575.
12. Garg A, Toy S, Tripodis Y, Silverstein M, Freeman E. Addressing social determinants of health at well child care visits: a cluster RCT. *Pediatrics*. 2015;135(2):e296-e304.
13. Finkelstein A, Zhou A, Taubman S, Doyle J. Health care hotspotting - a randomized, controlled trial. *N Engl J Med*. 2020;382(2):152-162.
14. Iovan S, Lantz PM, Allan K, Abir M. Interventions to decrease use in prehospital and emergency care settings among super-utilizers in the United States: a systematic review. *Med Care Res Rev*. 2020;77(2):99-111.
15. Schickedanz A, Sharp A, Hu YR, et al. Impact of social needs navigation on utilization among high utilizers in a large integrated health system: a quasi-experimental study. *J Gen Intern Med*. 2019;34(11):2382-2389.

16. Gottlieb LM, Wing H, Adler NE. A systematic review of interventions on patients' social and economic needs. *Am J Prev Med*. 2017;53(5):719-729.
17. McGregor J, Mercer SW, Harris FM. Health benefits of primary care social work for adults with complex health and social needs: a systematic review. *Health Soc Care Community*. 2018;26(1):1-13.
18. Mossabir R, Morris R, Kennedy A, Blickem C, Rogers A. A scoping review to understand the effectiveness of linking schemes from healthcare providers to community resources to improve the health and well-being of people with long-term conditions. *Health Soc Care Community*. 2015;23(5):467-484.
19. Shier G, Ginsburg M, Howell J, Volland P, Golden R. Strong social support services, such as transportation and help for caregivers, can lead to lower health care use and costs. *Health Aff (Millwood)*. 2013;32(3):544-551.
20. Budde H, Williams GA, Winkelmann J, Pfirter L, Maier CB. The role of patient navigators in ambulatory care: overview of systematic reviews. *BMC Health Serv Res*. 2021;21(1):1166.
21. Poleshuck E, Wittink M, Crean HF, et al. A comparative effectiveness trial of two patient-centered interventions for women with unmet social needs: personalized support for progress and enhanced screening and referral. *J Womens Health (Larchmt)*. 2020;29(2):242-252.
22. Sege R, Preer G, Morton SJ, et al. Medical-legal strategies to improve infant health care: a randomized trial. *Pediatrics*. 2015;136(1):97-106.
23. Syed ST, Gerber BS, Sharp LK. Traveling towards disease: transportation barriers to health care access. *J Community Health*. 2013;38(5):976-993.
24. Taylor LA, Tan AX, Coyle CE, et al. Leveraging the social determinants of health: what works? *PLoS One*. 2016;11(8):e0160217.
25. Berkowitz SA, Delahanty LM, Terranova J, et al. Medically tailored meal delivery for diabetes patients with food insecurity: a randomized cross-over trial. *J Gen Intern Med*. 2019;34(3):396-404.
26. Kangovi S, Mitra N, Norton L, et al. Effect of community health worker support on clinical outcomes of low-income patients across primary care facilities: a randomized clinical trial. *JAMA Intern Med*. 2018;178(12):1635-1643.
27. Yan AF, Chen Z, Wang Y, et al. Effectiveness of social needs screening and interventions in clinical settings on utilization, cost, and clinical outcomes: a systematic review. *Health Equity*. 2022;6(1):454-475.
28. McBrien KA, Ivers N, Barnieh L, et al. Patient navigators for people with chronic disease: a systematic review. *PLoS One*. 2018;13(2):e0191980.
29. Mistry SK, Harris E, Harris M. Community health workers as healthcare navigators in primary care chronic disease management: a systematic review. *J Gen Intern Med*. 2021;36(9):2755-2771.
30. Peart A, Lewis V, Brown T, Russell G. Patient navigators facilitating access to primary care: a scoping review. *BMJ Open*. 2018;8(3):e019252.
31. Eder M, Henninger M, Durbin S, et al. Screening and interventions for social risk factors: technical brief to support the US preventive services task force. *JAMA*. 2021;326(14):1416-1428.

32. Kreuter MW, Thompson T, McQueen A, Garg R. Addressing social needs in health care settings: evidence, challenges, and opportunities for public health. *Annu Rev Public Health*. 2021;42:329-344.
33. Berkowitz SA, Hulberg AC, Standish S, Reznor G, Atlas SJ. Addressing unmet basic resource needs as part of chronic cardiometabolic disease management. *JAMA Intern Med*. 2017;177(2):244-252.
34. Berkowitz SA, Hulberg AC, Placzek H, et al. Mechanisms associated with clinical improvement in interventions that address health-related social needs: a mixed-methods analysis. *Popul Health Manag*. 2019;22(5):399-405.
35. Brown DM, Hernandez EA, Levin S, et al. Effect of social needs case management on hospital use among adult medicaid beneficiaries. *Ann Intern Med*. 2022;175(8):1109-1117.
36. Fleming MD, Safaeinili N, Knox M, et al. Conceptualizing the effective mechanisms of a social needs case management program shown to reduce hospital use: a qualitative study. *BMC Health Serv Res*. 2022;22(1):1585.
37. Gottlieb LM, Hessler D, Long D, et al. Effects of social needs screening and in-person service navigation on child health: a randomized clinical trial. *JAMA Pediatr*. 2016;170(11):e162521.
38. Gottlieb L, Hessler D, Long D, et al. Are acute care settings amenable to addressing patient social needs: a sub-group analysis. *Am J Emerg Med*. 2018;36(11):2108-2109.
39. Hessler D, Fisher L, Dickinson M, Dickinson P, Parra J, Potter MB. The impact of enhancing self-management support for diabetes in Community Health Centers through patient engagement and relationship building: a primary care pragmatic cluster-randomized trial. *Transl Behav Med*. 2022;12(9):909-918.
40. Dickinson LM, Jones DH, Potter M, Dickinson P, Parra J, Fisher L. Improvements in social, behavioral, psychological, and clinical outcomes in patients with type 2 diabetes: a report from the. *Ann Fam Med*. 2023;21(Supplement 1):3526.
41. Beil H, Brower HM, Chepaitis A, et al. *Accountable Health Communities (AHC) Model Evaluation: Second Evaluation Report*. RTI International; 2023.
42. Aronstam A, Velazquez D, Wing H, et al. "It lightens your load:" interviews with family members receiving social services navigation in a pediatric urgent care. Poster presented at: 47th North American Primary Care Research Group (NAPCRG) Annual Meeting; November 16–20, 2019; Toronto, Ontario. North American Primary Care Research Group.
43. Kangovi S, Mitra N, Grande D, et al. Patient-centered community health worker intervention to improve posthospital outcomes: a randomized clinical trial. *JAMA Intern Med*. 2014;174(4):535-543.
44. Grinberg C, Hawthorne M, LaNoue M, Brenner J, Mautner D. The core of care management: the role of authentic relationships in caring for patients with frequent hospitalizations. *Popul Health Manag*. 2016;19(4):248-256.
45. National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Board on Health Care Services; Committee on Integrating Social Needs Care into the Delivery of Health Care to Improve the Nation's

Health. *Integrating Social Care into the Delivery of Health Care: Moving Upstream to Improve the Nation's Health*. National Academies Press; 2019.
46. Maness DL, Khan M. Care of the homeless: an overview. *Am Fam Physician*. 2014;89(8):634-640.
47. Montauk SL. The homeless in America: adapting your practice. *Am Fam Physician*. 2006;74(7):1132-1138.
48. Young-Hyman D, de Groot M, Hill-Briggs F, Gonzalez JS, Hood K, Peyrot M. Psychosocial care for people with diabetes: a position statement of the american diabetes association. *Diabetes Care*. 2016;39(12):2126-2140.
49. Tong ST, Liaw WR, Kashiri PL, et al. Clinician experiences with screening for social needs in primary care. *J Am Board Fam Med*. 2018;31(3):351-363.
50. Weiner SJ, Schwartz A. *Listening for What Matters: Avoiding Contextual Errors in Health Care*. Oxford University Press; 2023.
51. Byhoff E, De Marchis EH, Hessler D, et al. Part II: a qualitative study of social risk screening acceptability in patients and caregivers. *Am J Prev Med*. 2019;57(6)Suppl 1:S38-S46.
52. Glied S, D'Aunno T. Health systems and social services—a bridge too far? *JAMA Health Forum*. 2023;4(8):e233445.
53. Jack HE, Arabadjis SD, Sun L, Sullivan EE, Phillips RS. Impact of community health workers on use of healthcare services in the United States: a systematic review. *J Gen Intern Med*. 2017;32(3):325-344.
54. Kangovi S, Mitra N, Grande D, Long JA, Asch DA. Evidence-based community health worker program addresses unmet social needs and generates positive return on investment. *Health Aff (Millwood)*. 2020;39(2):207-213.
55. Rizzo VM, Rowe JM. Cost-effectiveness of social work services in aging:an updated systematic review. *Res Soc Work Pract*. 2016;26(6):653-667.

Conflict of Interest Disclosures: No disclosures were reported.

Address correspondence to: Laura M. Gottlieb, Department of Psychiatry and Behavioral Sciences, University of California, San Francisco, 675 18th St, Floor 5, San Francisco, CA 94143 (email: laura.gottlieb@ucsf.edu).