By Caroline Fichtenberg, Jorge Delva, Karen Minyard, and Laura M. Gottlieb

OVERVIEW

Health And Human Services Integration: Generating Sustained Health And Equity Improvements

DOI: 10.1377/hlthaff.2019.01594 HEALTH AFFAIRS 39, NO. 4 (2020): 567–573 ©2020 Project HOPE— The People-to-People Health Foundation. Inc.

ABSTRACT Concurrent increases in evidence about social determinants of health and the use of value-based health care incentives are driving new efforts to integrate health care and human services. Despite expectations that the integration of these complementary services could improve health, reduce health inequities, and reduce potentially avoidable health care use and costs, current evidence on the effectiveness, implementation, and sustainability of such cross-sectoral partnerships is sparse and mixed. To realize the potential of health care and human services integration, knowledge gaps in these key areas must be filled. In doing so, particular attention needs to be paid to understanding how power and resource differentials between organizations in the two sectors influence integration approaches and their impacts. Furthermore, increased societal investments in resources to address social needs are likely necessary for integrative initiatives to yield desired individual- and population-level impacts.

Caroline Fichtenberg (Caroline .Fichtenberg@ucsf.edu) is managing director of the Social Interventions Research and Evaluation Network and a research scientist in the Department of Family and Community Medicine at the University of California San Francisco.

Jorge Delva is dean of the School of Social Work, director of the Center for Innovation in Social Work and Health, and the Paul Farmer Professor, all at Boston University, in Massachusetts.

Karen Minyard is director of the Georgia Health Policy Center, Andrew Young School of Policy Studies, Georgia State University, in Atlanta.

Laura M. Gottlieb is director of the Social Interventions Research and Evaluation Network and an associate professor in the Department of Family and Community Medicine, University of California San Francisco.

ver the past few decades health researchers have generated an abundance of scientific evidence that documents how social and economic factors-including income, education, and the material goods they provide access to, as well as structural factors such as racism and political inequality-influence health over the life course.^{1,2} More recently, growing awareness about these social determinants of health has coincided with increased pressure to reduce unsustainably high health care costs by incentivizing value over volume.^{3,4} The timely convergence of an abundance of evidence on social determinants and the growth in value-based care incentives has contributed to new efforts in the health care sector to better coordinate and integrate health and human services. 5,6 As examples, a rapidly increasing number of health care organizations now incorporate social risk screening into clinical work flows;⁷ health care providers are increasingly using so-

cial workers and community health workers to attend to patients' social and economic needs and to create or strengthen links with community-based organizations and the human services sector;8 a number of states are expanding Medicaid services to include the coordination and provision of social services; major electronic health record (EHR) vendors are including social risk assessments in standard EHR modules, alongside new technology to enable electronic referrals to community-based social services;10 and new legislation has enabled some social services to be covered as supplemental benefits in Medicare Advantage.11 Most recently, in September 2019 the National Academies of Science, Engineering, and Medicine published a consensus study report that identified multiple entry points for the health care sector to deepen the integration of social and medical care.12

What ties all of these efforts together is the recognition that the health care sector alone cannot improve health outcomes, given the impact

that social and economic factors have on health, and that better coordination, partnership, and integration with the human services sector will help improve health outcomes and—it is often hoped—reduce potentially avoidable health care use and costs. Growing awareness of the impact of social factors on health has also been pushing the public health field to embrace and promote multisectoral approaches to community health improvement.¹³ Generally, these efforts envision collaboration and integration among public health, health care, and human services.¹⁴ Health care and human services collaboration can therefore be considered a subset of broader multisector collaboration.

Despite the rapid increase in enthusiasm for health and human services integration, there is relatively little published evidence on whether, when, and how integration initiatives work, which has meant that practitioners are not routinely learning from successes and failures. In addition, key challenges faced by implementation efforts, as well as implications of the health-centric way in which integration is typically pursued, have not yet been fully explored.

In this overview we summarize the characteristics of current health and human services integration efforts, synthesize key evidence on the effectiveness of different integration activities, and highlight associated gaps in the evidence and critical implementation challenges.

Characteristics Of Health And Human Services Integration Activities

Although there is relatively little formal scholarship that describes or defines health and human services integration (or multisector integration in general), there seems to be an emerging consensus that integration is a continuum from less involved (for example, coordination and collaboration) to more involved (such as full organizational integration). One of the least involved forms of health and human services integration is the practice of having health care organizations identify social risks and needs among patients and refer patients or help them navigate to external human services that might help address their needs. One step further along on the integration spectrum are health care organizations that collaborate with human services organizations to provide coordinated, complementary services to the people they both serve. Examples include organizations that use cross-sectoral referral technology to coordinate care across sectors;15 medical-legal partnerships, in which clinical care teams refer patients with legal needs to on-site legal services;16 and health care-food bank partnerships that help connect patients with food insecurity to food bank services. ¹⁷ Even further along on the integration continuum are jointly staffed and financed services such as supportive housing, in which health services are provided to people with mental illness or substance use disorder in conjunction with housing to support the interrelated goals of health and housing stability. ¹⁸

Although many integration efforts are limited to a partnership among a few organizations, broader communitywide health and human services integration efforts are also becoming more common. Examples include communitywide cross-sectoral coordination networks, such as the San Diego Community Information Exchange¹⁹ and North Carolina's NCCARE360 network,20 that provide the infrastructure to facilitate seamless cross-sectoral care for entire communities. Other examples include the placebased accountable health entities emerging across the country as part of Medicaid transformation efforts, which foster strategic alignment and the coordination of services through financial incentives.9,21

Whether integration efforts are limited to just a few organizations or implemented communitywide, the health care organizations that have been experimenting most actively with human services integration tend to be those that serve low-income individuals and families-such as community health centers, safety-net hospitals, and Medicaid agencies and health plans—where the high prevalence of social and economic barriers to health makes cross-sectoral coordination helpful for large numbers of patients. Some integration activities, especially those in primary care settings, are offered to all patients. Others focus specifically on high-cost patients with complex health and social needs, often in an effort to reduce costs.²² For example, California's Whole Person Care Pilots initiative is focused on highrisk, high-cost Medicaid beneficiaries.²³ Similarly, the Accountable Health Communities Model of the Center for Medicare and Medicaid Innovation seeks to reduce utilization and costs for people who had two or more emergency department visits in the past year.24

Finally, some health care organizations are also funding activities designed to address key social risks in the community as a whole, without tying them to specific health care organization clients. For example, a number of health systems and plans are supporting affordable housing development, community economic development, healthy food systems, and other community-level resources, through either grants or loans.²⁵ In a few cases, health care organizations are also engaging in social policy efforts to improve so-

Most of the integration efforts are initiated by health-sector organizations, funded with health care dollars, or both.

cial conditions in the communities they serve. For example, members of the Healthcare Anchor Network, a group of health systems committed to using their operational resources to improve health in their communities, have advocated for increased federal investments in affordable housing.²⁶

A common thread that runs through most of the health and human services integration efforts that are being developed is that they are largely initiated by health-sector organizations, funded with health care dollars, or both. The implications of this fact are discussed below.

Evidence Of Impact

Although efforts to foster better integration between health and human services are increasingly common, evidence that demonstrates the impacts of integration is limited and mixed. Some studies have documented improved health outcomes and cost reductions, 27-29 but other studies did not find anticipated health or health care benefits.30-32 A recent systematic review of the impacts of health care-based food insecurity interventions, for example, found some evidence that food referrals, fruit and vegetable vouchers, and home-delivered meals improved health and reduced food insecurity and health care use.33 However, the study findings were inconsistent, and study design issues limited confidence in the results.

The evidence base for the health and health care impacts of communitywide efforts is even smaller, owing to the challenge of studying interventions that cannot be randomized at the individual level. One recent study found that communities with denser multisector population health networks experienced greater declines in mortality from cardiovascular diseases, diabetes, and influenza over a sixteen-year period.³⁴ Two other recent studies have found that communities with more cross-sectoral collabora-

tion between health and social services organizations had lower health care use and costs among older adults.^{35,36} And early evaluations of regional Medicaid accountable health organizations indicate that these can generate improvements in health care quality, health equity, and costs—though these studies did not examine the role of cross-sector integration activities in achieving these outcomes.^{37,38}

Overall, studies of service integration efforts are too few in number and too mixed in their results to provide a conclusive evidence base at this point. 39-41 More, and more rigorous, research is needed to clarify effective and costeffective integration approaches. The recent null findings in a randomized controlled trial of the Camden Coalition care transitions model³⁰ highlight the importance of conducting controlled evaluations—particularly for interventions that target high-risk people, where regression to the mean is at play. Furthermore, evaluations of communitywide integration efforts will benefit from cross-community comparisons. In this respect, the results from the Accountable Health Communities Model,42 which is being implemented in thirty sites across the country, will provide invaluable insights.

Implementation Barriers

Studies of integration implementation consistently highlight challenges inherent in working across sectors with different organizational structures, business models, and cultures. 43-45 Developing new programs and work flows is never easy, even within a single organization. It is much more challenging when it involves separate organizations with different systems, staffing models, priorities, and languages. These challenges are intensified by the complexity and fragmentation of both systems. Human services organizations that market their services to health care organizations can be daunted by the health care sector's complex organizational relationships and funding mechanisms. For their part, health care organizations that seek human services partners face a fragmented and underfunded system that is not well positioned to easily partner with them.

Another consistent challenge to integrated health and human services is financial sustainability. The growth in outcomes- and value-based incentives in health care, which pay health care organizations for specific outcomes rather than the services used to achieve them, is giving the organizations increased flexibility to spend dollars on a wider range of services, including human services.^{46,47} However, human services organizations—which have historically been

funded by grants—are often not well prepared to enter into service contracts with health care organizations, especially if the former are being asked to document health outcomes.48 Furthermore, larger-scale integration efforts such as care coordination networks and accountable communities often struggle to secure ongoing funding for the infrastructure required for successful collaboration over the time horizons needed to build effective partnerships. Examples of funding mechanisms that make it possible to integrate funds across sectors include braiding, in which funds from different sources are used to provide coordinated services while keeping track of what each stream is being spent on, and blending, in which funds from different sources are combined without having to account for what each source is paying for. 49 Although these models have been identified in theory, they have proved hard to realize in practice.

These operational integration challenges are often exacerbated by yet another challenge: the political and financial power differential between the two sectors. The fact that the health care sector often initiates and funds collaborations means that its priorities, assumptions, and frameworks often set the terms of the integrations. There are benefits to this approach including making new sources of funding available for human services—which human services organizations are responding to. For example, over the past four years Community Servings, a thirty-year-old provider of medically tailored meals in Boston, successfully pursued contracts with health insurers as part of the nonprofit's financial sustainability strategy.⁵⁰ However, requiring human services to align with healthsector goals and business models can also have negative impacts. In a recent study in Massachusetts, leaders of community-based organizations reported feeling pressured into contracts that increased demand for services without adequate resources, focused on high-cost people or other specific subgroups at the expense of other clients, and created standardized service lines without the flexibility needed to fully address the multiple needs of vulnerable clients.⁴³

A Learning Agenda

The combination of a thin evidence base and numerous known implementation barriers translates into abundant opportunities to gain knowledge that can inform future integrative initiatives. Here, we group these opportunities into four priority areas that define a research-based learning agenda for future success.

The first priority area is better understanding which integration approaches work best and in

A consistent challenge to integrated health and human services is financial sustainability.

which contexts, for partnerships between a few organizations as well as communitywide coordination and integration efforts. Effectiveness outcomes reported in research and evaluations should include those relevant to the health care sector, such as health and costs, as well as those relevant to human services partners.

The second priority area is understanding how to bridge the cultural and operational differences between the two sectors. Relationship building has emerged as a key to overcoming some of these barriers. For example, a qualitative analysis of 208 health and human services partnerships found that the most important determinants of successful partnerships were the quality of relationships between partners and the levels of trust and alignment. More research is needed to identify how best to build trusting and effective partnerships across these two sectors, including how health care organizations benefit from recognizing the expertise of human services agencies in addressing social needs.

The third priority area in the learning agenda is the need to better examine and mitigate the potential unintended negative consequences of current approaches to integration—particularly consequences related to the imbalance of power and resources between the health and human services sectors. As highlighted above, the fact that many integration efforts are being driven by health-sector priorities could have negative consequences for human services organizations. Additionally, since the health care sector has traditionally valued individual-level treatment over population-level prevention, integrated models led by health care organizations may disproportionately focus on individual-level solutions rather than on system-level strategies. 52-54 This is especially problematic if individual-level approaches replace or are seen as substitutes for other investments in community- and policylevel interventions.55 Integration championed by the health sector might also increase the costs of human services, given the well-documented inefficiencies of the US health care system. 56,57 As

More research is needed to identify how best to build trusting and effective partnerships across the two sectors.

the health care sector extends its partnerships with human services, future work should examine the impacts of health-sector financing of human services on the types of interventions deployed and explore how to protect against inefficiencies, high costs, and poor outcomes.⁵⁸ Examining integration models—such as supportive housing—in which health and human services are equal partners may be particularly helpful for identifying integration features that promote effective partnership.¹⁸

The fourth area of inquiry is related to the need to test and compare financial sustainability models. There is a need to identify financing structures that best support mutually beneficial partnerships that balance the needs and priorities of both sectors for the benefit of the people served. Some encouraging efforts include initiatives such as the Nonprofit Finance Fund's Advancing Resilience and Community Health project, which is helping three networks of human services organizations build their capacity to contract sustainably with health care organizations.⁵⁹ However, most health organizations that have invested in human services have done so under the assumption that the investment will save money by reducing health care costs.5,60 While there is some evidence to support this view,61 it is not yet clear whether this will consistently be the case, as the recent disappointing results of the evaluation of the Camden Coalition's care transitions program has highlighted.55 For health care investments in human services to be sustainable, it may be necessary for health care organizations to judge investments

in human services as they judge investments in other medical services: based on the value of the health benefits they produce, rather than the potential to realize cost savings in the short term.

Conclusion

The health care sector's interest in human services interventions has led to a rapid growth in collaborations, partnerships, and other integration efforts between health care and social services organizations. Given the co-occurrence of social needs and poor health, these varied efforts have the potential to increase the efficiency and effectiveness of both health and human services and eventually to improve individual and population health—particularly for people who experience unmet social needs and poor health. For these opportunities to be realized, key gaps in knowledge about effectiveness, cross-sectoral collaboration, unintended consequences, and financial sustainability need to be filled. In particular, attention should be focused on ensuring that the two sectors' complementary areas of expertise and goals are equally valued and prioritized.

Ultimately, the success of integration efforts is also likely to depend on the degree to which the current recognition of the impact of social factors on health leads to increased societal investments to improve social conditions. The most effective cross-sectoral integration efforts will yield only limited impacts as long as the nation continues to underfund human services programs relative to the need for them. Although an increase in societal spending to address social needs will not happen overnight, continued growth in health care costs and the resulting constraints on state and federal budgets may eventually increase the political will required to drive change. The health care sector would be one of the major beneficiaries of such changes, since it would no longer need to use its resources to fill social service gaps. The other beneficiaries would be Americans who would experience increased health and well-being benefits from a system that leveraged the strengths of both sectors to generate impacts that neither sector can produce on its own. ■

The authors thank the anonymous reviewers and the editors for their insightful suggestions. Caroline Fichtenberg and Laura Gottlieb received support for this work from the Robert

Wood Johnson Foundation (Grant No. 75922) and from Kaiser Foundation Health Plan Inc. (Contract No. CRN5374-7544-15320). The views presented here are those of the authors and should not

be attributed to the Robert Wood Johnson Foundation or Kaiser Foundation Health Plan Inc.

NOTES

- 1 Adler NE, Stewart J. Health disparities across the lifespan: meaning, methods, and mechanisms. Ann N Y Acad Sci. 2010;1186:5–23.
- 2 Woolf SH, Braveman P. Where health disparities begin: the role of social and economic determinants—and why current policies may make matters worse. Health Aff (Millwood). 2011;30(10):1852–9.
- **3** Berwick DM, Nolan TW, Whittington J. The Triple Aim: care, health, and cost. Health Aff (Millwood). 2008; 27(3):759–69.
- 4 Muhlestein D, Saunders RS, Richards R, McClellan MB. Recent progress in the value journey: growth of ACOs and value-based payment models in 2018. Health Affairs Blog [blog on the Internet]. 2018 Aug 14 [cited 2020 Feb 26]. Available from: https://www.health affairs.org/do/10.1377/hblog 20180810.481968/full/
- 5 Bachrach D, Pfister H, Wallis K, Lipson M (Manatt Health Solutions). Addressing patients' social needs: an emerging business case for provider investment [Internet]. New York (NY): Commonwealth Fund; 2014 May [cited 2020 Feb 26]. Available from: https://www.commonwealthfund.org/sites/default/files/documents/___ media_files_publications_fund_report_2014_may_1749_bachrach_addressing_patients_social_needs_v2.pdf
- 6 Solomon LS, Kanter MH. Health care steps up to social determinants of health: current context. Perm J. 2018:22:48-52.
- 7 Fraze TK, Brewster AL, Lewis VA, Beidler LB, Murray GF, Colla CH. Prevalence of screening for food insecurity, housing instability, utility needs, transportation needs, and interpersonal violence by US physician practices and hospitals. JAMA Netw Open. 2019;2(9):e1911514.
- 8 Kangovi S, Mitra N, Grande D, White ML, McCollum S, Sellman J, et al. Patient-centered community health worker intervention to improve posthospital outcomes: a randomized clinical trial. JAMA Intern Med. 2014;174(4):535–43.
- 9 Crumley D, Lloyd J, Pucciarello M, Stapelfeld B. Addressing social determinants of health via Medicaid managed care contracts and Section 1115 demonstrations [Internet]. Hamilton (NJ): Center for Health Care Strategies; 2018 Dec [cited 2020 Feb 26]. Available from: https://www.chcs.org/media/ Addressing-SDOH-Medicaid-Contracts-1115-Demonstrations-121118.pdf
- 10 Gold R, Cottrell E, Bunce A, Middendorf M, Hollombe C, Cowburn S, et al. Developing electronic health record (EHR) strate-

- gies related to health center patients' social determinants of health. J Am Board Fam Med. 2017;30(4):428-47.
- 11 Centers for Medicare and Medicaid Services [Internet]. Baltimore (MD): CMS; 2019. Press release, CMS finalizes Medicare Advantage and Part D payment and policy updates to maximize competition and coverage; 2019 Apr 1 [cited 2020 Feb 26]. Available from: https://www.cms.gov/newsroom/press-releases/cms-finalizes-medicare-advantage-and-part-d-payment-and-policy-updates-maximize-competition-and
- 12 National Academies of Sciences, Engineering, and Medicine. Integrating social care into the delivery of health care: moving upstream to improve the nation's health. Washington (DC): National Academies Press: 2019.
- 13 Towe VL, Leviton L, Chandra A, Sloan JC, Tait M, Orleans T. Crosssector collaborations and partnerships: essential ingredients to help shape health and well-being. Health Aff (Millwood). 2016;35(11):1964–9.
- 14 Georgia Health Policy Center. Crosssector alignment theory of change [Internet]. Atlanta (GA): GHPC; 2019 [cited 2020 Feb 26]. Available from: https://ghpc.gsu.edu/ download/cross-sector-alignmenttheory-of-change/?wpdmdl=4752171 &refresh=5e3c2f270859e 1581002535
- 15 Cartier Y, Fichtenberg C, Gottlieb L.
 Community resource referral platforms: a guide for health care organizations [Internet]. San
 Francisco (CA): University of
 California San Francisco, Social Interventions Research and Evaluation
 Network; 2019 Apr 16 [cited 2020
 Feb 26]. Available from: https://sirenetwork.ucsf.edu/sites/sire
 network.ucsf.edu/files/wysiwyg/
 Community-Resource-ReferralPlatforms-Guide.pdf
- 16 Regenstein M, Trott J, Williamson A, Theiss J. Addressing social determinants of health through medicallegal partnerships. Health Aff (Millwood). 2018;37(3):378–85.
- 17 Lundeen EA, Siegel KR, Calhoun H, Kim SA, Garcia SP, Hoeting NM, et al. Clinical-community partnerships to identify patients with food insecurity and address food needs. Prev Chronic Dis. 2017;14(11):E113.
- 18 Rog DJ, Marshall T, Dougherty RH, George P, Daniels AS, Ghose SS, et al. Permanent supportive housing: assessing the evidence. Psychiatr Serv. 2014;65(3):287–94.
- 19 CIE. CIE toolkit [Internet]. San Diego (CA): CIE; [cited 2020 Feb 26]. Available from: https:// ciesandiego.org/toolkit/
- 20 North Carolina Department of Health and Human Services. NCCARE360 [Internet]. Raleigh

- (NC): NCDHHS; [cited 2020 Feb 26]. Available from: https://www.ncdhhs.gov/about/department-initiatives/healthy-opportunities/nccare360
- 21 Funders Forum on Accountable Health. Principles of accountable health [Internet]. Washington (DC): The Forum; [cited 2020 Feb 26]. Available from: https://accountablehealth.gwu.edu/funders-forum/principles-accountable-health
- 22 Schulman M, Thomas-Henkel C. Opportunities for complex care programs to address the social determinants of health [Internet]. Hamilton (NJ): Center for Health Care Strategies; 2019 Feb [cited 2020 Feb 26]. (Brief). Available from: https://www.chcs.org/media/TCC-SDOH-022119.pdf
- 23 California Department of Health Care Services. Whole Person Care Pilots [Internet]. Sacramento (CA): DHCS; [last modified 2020 Feb 25; cited 2020 Feb 26]. Available from: https://www.dhcs.ca.gov/services/ Pages/WholePersonCarePilots.aspx
- 24 Alley DE, Asomugha CN, Conway PH, Sanghavi DM. Accountable Health Communities—addressing social needs through Medicare and Medicaid. N Engl J Med. 2016; 374(1):8-11.
- 25 Horwitz LI, Chang C, Arcilla HN, Knickman JR. Quantifying health systems' investment in social determinants of health, by sector, 2017– 19. Health Aff (Millwood). 2020; 39(2):192–8.
- 26 Healthcare Anchor Network.

 "Housing for Health" Policy Day draws attention to the need for stable, affordable housing [Internet]. Washington (DC): The Network; 2019 Marl 1 [cited 2020 Feb 26]. Available from: https://healthcare anchor.network/2019/03/housing-for-health-policy-day-draws-attention-to-the-need-for-stable-affordable-housing
- 27 Gottlieb LM, Hessler D, Long D, Laves E, Burns AR, Amaya A, 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.
- 28 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):244–52.
- 29 Berkowitz SA, Terranova J, Hill C, Ajayi T, Linsky T, Tishler LW, et al. Meal delivery programs reduce the use of costly health care in dually eligible Medicare and Medicaid beneficiaries. Health Aff (Millwood). 2018;37(4):535–42.
- **30** Finkelstein A, Zhou A, Taubman S,

- Doyle J. Health care hotspotting—a randomized, controlled trial. N Engl J Med. 2020;382(2):152–62.
- 31 Lindau ST, Makelarski JA, Abramsohn EM, Beiser DG, Boyd K, Chou C, et al. CommunityRx: a realworld controlled clinical trial of a scalable, low-intensity community resource referral intervention. Am J Public Health. 2019;109(4):600–6.
- **32** Wu AW, Weston CM, Ibe CA, Ruberman CF, Bone L, Boonyasai RT, et al. The Baltimore Community-Based Organizations Neighborhood Network: Enhancing Capacity Together (CONNECT) cluster RCT. Am J Prev Med. 2019;57(2):e31–41.
- **33** De Marchis EH, Torres JM, Benesch T, Fichtenberg C, Allen IE, Whitaker EM, et al. Interventions addressing food insecurity in health care settings: a systematic review. Ann Fam Med. 2019;17(5):436–47.
- 34 Mays GP, Mamaril CB, Timsina LR. Preventable death rates fell where communities expanded population health activities through multisector networks. Health Aff (Millwood). 2016;35(11):2005–13.
- **35** Brewster AL, Kunkel S, Straker J, Curry LA. Cross-sectoral partnerships by Area Agencies on Aging: associations with health care use and spending. Health Aff (Millwood). 2018;37(1):15–21.
- 36 Brewster AL, Yuan CT, Tan AX, Tangoren CG, Curry LA. Collaboration in health care and social service networks for older adults: association with health care utilization measures. Med Care. 2019;57(5): 327–33.
- 37 McConnell KJ, Renfro S, Chan BK, Meath TH, Mendelson A, Cohen D, et al. Early performance in Medicaid accountable care organizations: a comparison of Oregon and Colorado. JAMA Intern Med. 2017; 177(4):538–45.
- 38 Muoto I, Luck J, Yoon J, Bernell S, Snowden JM. Oregon's coordinated care organizations increased timely prenatal care initiation and decreased disparities. Health Aff (Millwood). 2016;35(9):1625–32.
- **39** Gottlieb LM, Wing H, Adler NE. A systematic review of interventions on patients' social and economic needs. Am J Prev Med. 2017;53(5): 719–29.
- 40 Bickerdike L, Booth A, Wilson PM, Farley K, Wright K. Social prescribing: less rhetoric and more reality. A systematic review of the evidence. BMJ Open. 2017;7(4):e013384.
- 41 Fichtenberg CM, Alley DE, Mistry KB. Improving social needs intervention research: key questions for advancing the field. Am J Prev Med. 2019;57(6S1):S47-54.
- **42** CMS.gov. Accountable Health Communities Model [Internet].
 Baltimore (MD): Centers for Medicare and Medicaid Services; [last updated 2019 Nov 13; cited 2020 Feb

- 26]. Available from: https://innovation.cms.gov/initiatives/
- **43** Byhoff E, Taylor LA. Massachusetts community-based organization perspectives on Medicaid redesign. Am J Prev Med. 2019;57(6S1, Suppl 1): S74–81.
- 44 Griffin K, Nelson C, Realmuto L, Weiss L. Partnerships between New York City health care institutions and community-based organizations: a qualitative study on processes, outcomes, facilitators, and barriers to effective collaboration [Internet]. New York (NY): Greater New York Hospital Association; 2018 Apr [cited 2020 Feb 27]. Available from: https://nyam.org/media/filer_public/9f/5b/9f5b33a3-0795-4a1a-9b90-fa999e9ddf8e/hco_cbo_partnerships_digital.pdf
- **45** Fisher MP, Elnitsky C. Health and social services integration: a review of concepts and models. Soc Work Public Health. 2012;27(5):441–68.
- 46 Government Accountability Office. Pay for success [Internet]. Washington (DC): GAO; 2015 Sep [cited 2020 Feb 27]. Available from: https://www.gao.gov/assets/680/ 672363.pdf
- **47** Gottlieb LM, Tabbush V. Strategies for using healthcare dollars to support social services. Generations. 2018;42(1):36–40.
- 48 Felland L, Lipson D, Heeringa J.
 Examining New York's Delivery
 System Reform Incentive Payment
 demonstration: achievements at the
 demonstration's midpoint and lessons for other states [Internet].
 Princeton (NJ): Mathematica; 2018
 Apr [cited 2020 Feb 25]. Available
 for download from: https://www
 .mathematica.org/our-publicationsand-findings/publications/
 examining-new-yorks-deliverysystem-reform-incentive-paymentdemonstration-achievements
- 49 Clary A, Riley T. Braiding and blending funding streams to meet the health-related social needs of low-income persons: considerations for state health policymakers [Internet]. Portland (ME): National Academy for State Health Policy; 2016 Feb [cited 2020 Feb 27]. Available from: https://nashp.org/wp-content/uploads/2016/02/Jean1.pdf
- 50 Community Servings. Food heals [Internet]. Jamaica Plain (MA): Community Servings; c 2020 [cited 2020 Feb 27]. Available from: https://www.servings.org/
- 51 Miller E, Nath T, Line L. Working together toward better health outcomes [Internet]. Hamilton (NJ): Center for Health Care Strategies; 2017 Jun [cited 2020 Feb 26]. Available from: https://www.chcs.org/media/Working-Together-Toward-Better-Health-Outcomes.pdf
- **52** Kindig D. Beyond the Triple Aim:

- integrating the nonmedical sectors. Health Affairs Blog [blog on the Internet]. 2008 May 19 [cited 2020 Feb 27]. Available from: https://www.healthaffairs.org/do/10.1377/hblog20080519.000393/full/
- 53 Taylor L, Hyatt A, Sandel M. Defining the health care system's role in addressing social determinants and population health. Health Affairs Blog [blog on the Internet]. 2016 Nov 17 [cited 2020 Feb 27]. Available from: https://www.healthaffairs.org/do/10.1377/hblog20161117.057601/full/
- **54** Lantz PM. The medicalization of population health: who will stay upstream? Milbank Q. 2019;97(1): 36.0
- 55 Castrucci B, Auerbach J. Meeting individual social needs falls short of addressing social determinants of health. Health Affairs Blog [blog on the Internet]. 2019 Jan 16 [cited 2020 Feb 27]. Available from: https://www.healthaffairs.org/do/10.1377/hblog20190115.234942/full/
- 56 Anderson GF, Reinhardt UE, Hussey PS, Petrosyan V. It's the prices, stupid: why the United States is so different from other countries. Health Aff (Millwood). 2003;22(3):89–105.
- **57** Papanicolas I, Woskie LR, Jha AK. Health care spending in the United States and other high-income countries. JAMA. 2018;319(10):1024–39.
- 58 Abrams MK, Moulds D. Integrating medical and social services: a pressing priority for health systems and payers. Health Affairs Blog [blog on the Internet]. 2016 Jul 5 [cited 2020 Feb 27]. Available from: https://www.healthaffairs.org/do/10.1377/hblog20160705.055717/full/
- 59 Nonprofit Finance Fund. Advancing resilience and community health [Internet]. New York (NY): NFF; [cited 2020 Feb 27]. Available from: https://nff.org/advancing-resilience-community-health
- 60 Van Beek E, Eckel D, Taylor A
 (KPMG, New York, NY). Investing in
 social services as a core strategy for
 healthcare organizations: developing the business case [Internet]. New
 York (NY): Commonwealth Fund;
 2018 Mar [cited 2020 Feb 27].
 Available from: https://www
 .commonwealthfund.org/sites/
 default/files/documents/__
 media_files_publications_other_
 2018_investingsocialservices_pdf
 .pdf
- 61 Tsega M, Lewis C, McCarthy D, Shah T, Coutts K. Review of evidence on the health care impacts of interventions to address the social determinants of health [Internet]. New York (NY): Commonwealth Fund; [cited 2020 Feb 27]. Available from: https://www.commonwealthfund.org/sites/default/files/2019-07/COMBINED_ROI_EVIDENCE_REVIEW_7.15.19.pdf