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McKinsey Center for US Health System Reform: Intelligence Brief

Addressing the social determinants of health: Capturing improved health outcomes and ROI for state Medicaid programs

The social determinants of health (SDoH) strongly contribute to variations in health status. Addressing SDoH can help ensure access to high-quality care, improve outcomes, and manage costs.

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April 2019

Health happens in neighborhoods. The social determinants of health (SDoH)—the conditions in which people are born, grow, live, work, and age[1]—contribute to about 40 percent[2] of the variation in health status among individuals. It is increasingly important that healthcare stakeholders address SDoH (including economic stability, employment, education, food security, housing, transportation, social support, and safety) to ensure access to high-quality care, improve outcomes, and effectively manage costs.

Momentum is building among public- and private-sector leaders to integrate health and social care, given the interdependencies between these types of spending.[3] Private payers and providers are investing in SDoH programs and interventions (such as affordable housing programs, subsidize ride-sharing to appointments, meal deliveries, and healthy food prescriptions). Federal models, such as Accountable Health Communities and Integrated Care for Kids, are testing the impact of addressing health-related social needs and coordinating with services outside of clinical care. However, stakeholders often encounter several obstacles in undertaking SDoH efforts, including difficulties identifying the right SDoH to prioritize; designing interventions across organizational and legal boundaries; and systematically implementing and scaling SDoH interventions in a fragmented social and healthcare ecosystem, where financial incentives for states, providers, community-based organizations, and other partners may not be aligned.

This paper describes seven tactical actions that state Medicaid programs interested in addressing SDoH can consider (Exhibit 1). These actions have the potential to improve the program's quality (e.g., customer experience, health outcomes) and are also likely to yield a positive financial return on investment (ROI). Both are crucial when determining whether available resources have been used efficiently.[4]

Although this paper focuses on Medicaid programs, the actions described may also be relevant for other markets within a state agency's purview, such as the individual market exchange or state employee health benefit plan.

Advanced analytics: building a business case

To ensure appropriate resource allocation and sustain SDoH-related investments, SDoH programs must demonstrate improvements in health outcomes that lead to a measurable reduction in the cost of care, and thus generate an economic ROI from

1 WHO. Social determinants of health.
2 University of Wisconsin Population Health Institute. County health rankings key findings 2018.
3 Bradley EH, Taylor LA. *The American Health Care Paradox: Why Spending More is Getting Us Less*. New York, NY: PublicAffairs, 2013.
4 Managing a Medicaid program's costs while maintaining or improving its quality has become increasingly important—the National Association of State Budget Officers has estimated that total Medicaid state expenditures (including federal and state funding) were 29 percent of state budgets in fiscal year 2017. They also estimate that from fiscal year 2016 to fiscal year 2017, total Medicaid state expenditures grew by 6.1 percent, state funding rose by 7.8 percent, and federal funding increased by 5.0 percent. (See NASBO state expenditure report summary, FY 2015–17. November 2017.)

Insights on social determinants of health

This paper is the first publication from extensive research McKinsey has conducted on SDoH, and we will continue to share our findings as our work on this topic progresses. In the coming months, we intend to further explore how SDoH affect healthcare behaviors, attitudes, and utilization, as well as how SDoH data can be used in analytic approaches.

the perspective of the Medicaid program. Often, however, SDoH initiatives lack a clear business case and thus it becomes difficult to determine whether investments in these initiatives achieve these goals. Advanced analytics can help state agencies identify which social determinants to focus on and determine how to establish clear, measurable goals to demonstrate impact on outcomes and costs.

1. **Align SDoH efforts with strategic objectives:** Many efforts to address SDoH start with a proposed solution for a specific determinant—for example, a housing or food security program. However, such interventions may have too broad a target population, address an SDoH that has a negligible impact on healthcare utilization, or result in low or unmeasurable impact on care quality and value. When a case for investing is being built, therefore, we recommend that state agencies not start with a specific SDoH, but rather first determine the program's key strategic objectives, expressed in health gains and cost reduction. For example, if a state agency aims to address preventable hospital utilization, advanced analytics incorporating SDoH data can help identify beneficiaries who may have underlying SDoH issues that are contributing to poor outcomes and increased emergency department or inpatient costs.

   Thus, analytics can help state agencies develop insights about which communities, beneficiaries, and/or specific SDoH factors to address. The agencies can then prioritize the populations, geographies, and interventions with the highest potential for impact, as well as ensure that providers and community organizations have the tools and support required to make certain that individuals receive necessary services.

2. **Determine how outcomes will be improved and costs reduced through SDoH interventions:** Metrics related to investment/operational costs, healthcare spending, and impact on outcomes (both short- and long-term) are often not robustly tracked, leading to vague estimates of care quality and financial impact.[5] To break this dynamic, we recommend that state agencies test hypotheses and continually monitor performance using metrics derived from claims, member surveys, or public health data (Exhibit 2).

[5] Saver BG et al. Care that matters: Quality measurement and health care. *PLoS Medicine*. 2015;12(11):e1001902.

Exhibit 1

Tactical actions state agencies can consider to address social determinants of health (SDoH)

Advanced analytics: Building a business case	1	Align SDoH efforts with strategic objectives
	2	Determine how outcomes will be improved and costs reduced through SDoH interventions
Delivery model: Tailoring care to communities	3	Work with local stakeholders to design effective, data-driven interventions
	4	Evaluate and improve interventions with a clear timeline and criteria for scaling
Financing: Innovating on incentives	5	Establish partnerships or enable other organizations to address SDoH
	6	Take advantage of federal funds to support social-service providers
	7	Incorporate SDoH into the design of provider value-based contracts and risk adjustment

Exhibit 2

How the potential impact of SDoH interventions can be estimated

ILLUSTRATIVE EXAMPLE

	Identify strategic priorities and sources of value	Hypothesize on how SDoH interventions could address strategic priorities or sources of value	Estimate potential impact on strategic priorities and sources of value
Context	• Reduce preventable hospital utilization and associated costs	• Improving housing conditions (e.g., removing mold and carpet infestations) might help decrease the number of potentially avoidable exacerbations and complications related to asthma and COPD	• Identify which members are more likely to benefit from SDoH interventions (e.g., mold removal, support for other determinants), clinical interventions (e.g., disease-specific clinical care management), or a combination of both
Analytics	• Claims analytics demonstrate that asthma and COPD exacerbations are responsible for significant ED and inpatient spending in the geographies of interest	• Geographic data indicates presence of inadequate housing conditions in priority geographies • Academic literature suggests strong associations between mold and other irritants and asthma and COPD	• Determine if hospital utilization for asthma and COPD members is associated with — Exposure to irritants from inadequate housing conditions and other social factors — Other characteristics (e.g., demographics, clinical factors, other social risk factors) • Use analytics to inform which interventions to offer and to whom

COPD, chronic obstructive pulmonary disease; ED, emergency department; SDoH, social determinants of health.

For example, the rate of potentially avoidable exacerbations and complications (PECs) is one metric that can be used to evaluate SDoH interventions. The healthcare spending associated with PECs can account for more than 15 percent of total Medicaid costs.[6] However, PECs are, by definition, events that the healthcare system can often prevent (for example, a chronic obstructive pulmonary disease [COPD] exacerbation leading to hospital admission, a stroke in a beneficiary with diabetes). Many PECs are associated with SDoH factors; examples include asthma exacerbations due to exposure to mold and cardiac exacerbations due to poor access to healthy foods.

Understanding which PECs have the greatest impact on patient outcomes and spending—and which SDoH factors are associated with them—can inform the program's design and business case (such as an estimated reduction in PECs and the associated potential cost savings).

Delivery model: tailoring care to communities

Analytic insights can be used to match appropriate resources to those most in need. However, the ability to impact outcomes and spending requires interventions that engage members in new practices and behaviors.

3. **Design effective interventions:** The uptake and effectiveness of interventions can be increased if state agencies work with local stakeholders (including beneficiaries, providers, community organizations, academics, and policymakers) to design programs that reflect their needs and assets, and then deploy the programs in a manner that will engage targeted individuals (e.g., by using the right channels, messaging, and incentives). For example, existing care management efforts might prompt members to pick up prescriptions but not take into consideration that cost and transportation are common barriers in some regions. Input from the community can help to highlight the need for financial support (which could be addressed,

6 McKinsey analysis of state Medicaid data (excluding long-term services and supports [LTSS]).

for example, by connecting members with prescription drug financial assistance programs) and for ride-sharing or prescription drop-off programs to improve access. Understanding member preferences through quantitative and qualitative data can then shape messaging and outreach efforts, increasing the likelihood that members are informed about how they can obtain and afford medications. In a virtuous circle, savings achieved through better medication adherence (and a consequent decrease in PECs) could be reinvested to scale or launch additional interventions.

4. **Evaluate and improve interventions:** Measuring the impact of interventions is critical and begins with the collection of baseline social, utilization, and clinical metrics (Exhibit 3). The clinical metrics, for example, could include the percentage of members who are food-insecure, monthly volume of nonemergent ED visits, or HbA1c levels in diabetic beneficiaries.

   An intervention's impact may not be immediately evident; proxy measures and leading indicators will be important to gauge participation. After an initial period, interventions can be adapted to address flaws or build on strengths. To avoid pilot paralysis, a timeline and criteria for scaling or ceasing the pilot should be in place (for example, scale if target savings are achieved in 12 months; cease if there is no impact on health outcomes after 6 months).

Financing: Innovating on incentives

Currently, many SDoH initiatives are funded through grants or public funding—with limited accountability for outcomes or ROI and without a clear path to sustainability. State agencies have an opportunity to realize sustainable funding for SDoH interventions in at least three practical, complementary ways.

5. **Establish partnerships or enable other organizations to address SDoH:** Successful partnerships can be formed wherever clear synergies exist such that parties have a strong self-interest to cooperate. For example, Departments of Education and Health could partner to address childhood asthma exacerbations, thereby reducing ED visits while improving school attendance.[7] However, ensuring cross-partner information-sharing and collaboration can be challenging. Data privacy and governance issues are often the largest obstacle, requiring consensus on how to share and manage sensitive data. Additionally, effective collaboration may require changes in policies, organization, and/or leadership. Nevertheless, such partnerships may make it possible to leverage existing funds more efficiently.

   State agencies can also enable other organizations to address SDoH. As North Carolina transitions its Medicaid program to managed care, for example, it has invested in tools that it then provides at no cost to make it easier for healthcare stakeholders to address SDoH. These tools include:

   — An interactive map showing SDoH indicators by region, which will help organizations identify SDoH most prevalent in their area[8]

   — A standardized SDoH screening tool to establish consistency among independent payer and provider organizations[9]

   — A community resource database and referral tool to create a standard data-sharing system for health and social care coordination; this tool will be freely available to payers, health systems, providers, and community-based organizations[10]

7 AcademyHealth and Nemours Children's Health System. Medicaid and Head Start: Opportunities to collaborate and pay for upstream prevention. March 2018.
8 North Carolina State Department of Health and Human Services. DHHS releases interactive map showing social determinants of health indicators across North Carolina. April 2018.
9 North Carolina State Department of Health and Human Services. Using standardized social determinants of health screening questions to identify and assist patients with unmet health-related resource needs in North Carolina. April 2018.
10 Foundation for Health Leadership and Innovation. NCCARE360 selected to build a new tool for a healthier North Carolina—the NC resource platform. August 2018.

Exhibit 3

Tracking the impact of SDoH interventions

		Potential ways to measure impact
Process measures	Volume	• Total number of people who receive the intervention
	Engagement rate	• Number of people who receive the intervention over time (e.g., per week, per month)
Individual outcomes	Health literacy	• Knowledge of risk factors for given condition • Health system navigation (e.g., understanding of benefits)
	Behavior change	• Self management (e.g., treatment compliance, missed appointments) • Lifestyle changes (e.g., improved diet)
	Utilization	• Decreased utilization (e.g., admissions, re-admissions, ED visits) • Increased utilization (e.g., medical or behavioral health treatment)
	Health outcomes	• Health/functional status • Morbidity, mortality • Health-related quality of life • Condition-specific outcomes (e.g., glucose, cholesterol, weight)
	SDoH outcomes	• Standard SDoH screening tools and surveys (e.g., PRAPARE assessment, Accountable Health Communities Health-Related Social Needs Screening Tool)
Program outcomes	Quality	• PECs, other standard quality measures (e.g., HEDIS) • Member experience and satisfaction (e.g., member feedback, NPS, CAHPS)
	Costs	• Costs of labor, supplies, and technology needed to deliver the intervention
	Savings	• Changes in cost of care (e.g., decrease in total cost for targeted condition due to changes in utilization)
	ROI	• Savings over invested costs

In addition to selecting the metrics to track, managing impact would also imply:

- **Setting measurable goals and timelines** using the selected metrics
- **Establishing a frequency for collecting and assessing each metric** (e.g., collected daily for future analytics, but assessed monthly as part of standard operations)
- **Aligning on reporting requirements** (e.g., audience, format, cadence)
- **Defining criteria for scaling, modifying, or ending the program**

CAHPS, Consumer Assessment of Healthcare Providers and Systems; ED, emergency department; HEDIS, Healthcare Effectiveness Data and Information Set; NPS, Net Promoter Score; PECs, potentially avoidable exacerbations and complications; PRAPARE, Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences; ROI, return on investment; SDoH, social determinants of health.

6. **Take advantage of federal funds to support social-service providers:** Several sources of federal funding are available to support social service partnerships and offset the up-front costs of SDoH investments. A few examples (not exhaustive) are listed below:

   — *Centers for Medicare & Medicaid Services (CMS) waivers:* 1115 demonstration waivers can help state agencies direct funding to interventions and organizations addressing SDoH as part of efforts to improve physical and behavioral health.[11,12] Further, through 1915 waivers, CMS allows state agencies to cover housing-related services.[13]

   — *Medicaid Federal Financial Participation (FFP) matching funds:* To help support data and analytics infrastructure modifications related to SDoH, CMS will match Medicaid FFP funds at a 75- to 90-percent match rate.[14] Examples of efforts that could qualify for matching funds include creating a unique identifier across social services programs to facilitate data exchange or building SDoH risk profiles from beneficiary data to inform case management.

   — *Flexibility through CMS's Managed Care Final Rule:* States with managed care can use the increased flexibility provided by the 2016 Final Rule, which gives managed care organizations (MCOs) the ability to cover value-added nonmedical services, such as nutrition classes.[15]

   — *SUPPORT Act:* The 2018 SUPPORT for Patients and Communities Act allocates funds for an enhanced federal match to health home programs focused on individuals with substance use disorder. The funds, which have been allocated for 10 quarters, can be used for several SDoH-related services (such as referral to community and social support services). By amending the Institutions for Mental Diseases exclusion, the SUPPORT Act also gives state agencies the ability to use Medicaid funds through a state plan amendment to pay for treatment services in eligible institutions for mental disease, including those in the community.[16]

   — *MOM and InCK models:* Maternal Opioid Misuse (MOM) and Integrated Care for Kids (InCK) are two models introduced by the Center for Medicare & Medicaid Innovation that are relevant to SDoH. MOM aims to support state agencies in improving integrated care delivery for pregnant and postpartum women with opioid use disorder, in part by strengthening connections to wrap-around services (including referral and coordination with community and social services). InCK seeks to support state agencies in developing innovative delivery and payment models for children, with a focus on addressing behavioral health conditions, substance use disorders, and SDoH. The application deadlines for these funding opportunities are in May and June of 2019, respectively.[17,18]

7. **Incorporate SDoH into the design of provider value-based contracts and risk adjustment:** Value-based models with accountability for total cost of care offer incentives to address health more holistically. Under such arrangements, providers

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11 Center for Health Care Strategies. State payment and financing models to promote health and social service integration. February 2015.
12 Centers for Medicare & Medicaid Services. CMS announces new Medicaid demonstration opportunity to expand mental health treatment services. November 2018.
13 Kaiser Family Foundation. Linking Medicaid and supportive housing: Opportunities and on-the-ground examples. January 2017.
14 Ninety-percent match for development; 75-percent match for operational costs. (See Federal Register. Mechanized claims processing and information retrieval systems (90/10): Final rule. December 2015.)
15 While value-added services can contribute to a plan's medical loss ratio, they are not permitted to factor into a plan's capitation rate. (See The Commonwealth Fund. Addressing the social determinants of health through Medicaid managed care. November 2017.)
16 Kaiser Family Foundation. Federal legislation to address the opioid crisis: Medicaid provisions in the SUPPORT Act. October 2018.
17 Centers for Medicare & Medicaid Services. Fact sheet: Maternal Opioid Misuse (MOM) model. February 2019.
18 Centers for Medicare & Medicaid Services. Fact sheet: Integrated Care for Kids (InCK) model. August 2018.

can use shared savings or up-front capitated payments to pay for SDoH interventions designed to avoid admissions or complications, resulting in both higher care quality and improved performance on cost metrics. Providers can also contract with community-based organizations (CBOs) to offer social services.

New York and Massachusetts are both examples of states that have incorporated SDoH into their design of value-based programs. New York's Medicaid DSRIP program requires providers in value-based models to implement at least one social determinant intervention by contracting with at least one nonprofit CBO.[19] This model has the added benefit of giving CBOs an additional revenue stream, helping them stabilize and grow.

The MassHealth Medicaid risk-adjustment methodology incorporates a "neighborhood stress score" that includes measures such as local poverty, employment, and education rates, and access to transportation.[20] Thus, providers who treat patients with high social needs are not penalized for factors beyond their control and are more likely to participate in the program.

State initiatives to address SDoH have the potential to improve health outcomes while reducing healthcare costs. Advanced analytics, interventions tailored to communities, and partnerships with effective incentives are key. Successful efforts may result in more sustainable Medicaid programs (and potentially individual exchange plans and state employee health plans), as well as healthier and more engaged beneficiaries.

As interest in addressing SDoH grows, we will continue to develop proprietary analytics, share insights, and monitor activity in this area.

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[19] Delivery System Reform Incentive Payment (DSRIP) programs are authorized through 1115 waivers. (See New York State Department of Health DSRIP website. Value based payment reform (VBP).)

[20] UMass. MassHealth Social determinants of health payment design September report. October 2016.

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The authors would like to thank Jessica Kahn, Nina Jacobi, and Alex Luterek for their contributions to this paper.

Editor: Ellen Rosen