

Measuring Social Determinants of Health among Medicaid Beneficiaries: Early State Lessons

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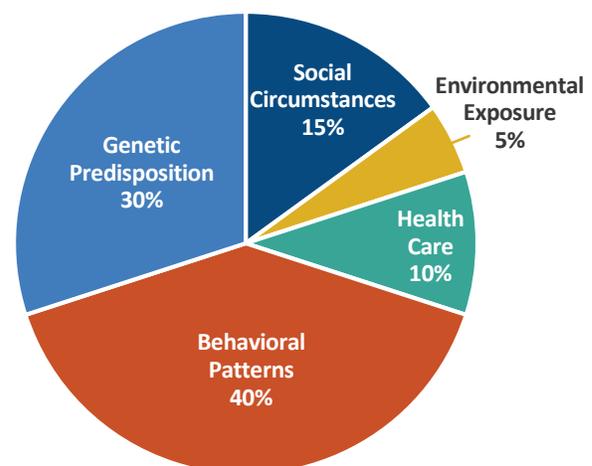
IN BRIEF

Newer payment and care models aimed at improving health outcomes and lowering costs of Medicaid beneficiaries are leading providers and health plans to address the root causes of poor health and high health care costs, some of which relate back to underlying social needs, such as housing and nutrition. Collecting and using data to understand the health-related social needs of patients can help guide state Medicaid agencies in supporting such innovative interventions.¹ Little is known, however, about state-based efforts to collect and use social determinants of health (SDOH) data, including what data health plans and providers are required to collect. This brief, made possible by The Commonwealth Fund, explores strategies states are using to capture SDOH information on Medicaid beneficiaries. The insights gleaned from interviews with early state innovators can help policymakers drive greater and more consistent collection of individual-level SDOH information, which can inform patient-level interventions, population health management, research and evaluation, and broader delivery system reform. As federal and state policymakers determine how to structure publicly financed health care for low-income Americans, they should be armed with information about how to measure the social determinants of health and facilitate stronger linkages between health and social service agencies.

Social determinants of health (SDOH) are conditions in the environment in which people are born, live, learn, work, play, worship, and age that affect health outcomes and risks, functioning, and quality-of-life.² These social, economic and environmental conditions, in addition to health behaviors, relate to an estimated 80 percent of health outcomes in the United States.³ Moreover, behavioral patterns/health-risk behaviors (40%), social circumstances (15%), and environmental exposures (5%) play a significant role in premature death in this country (Exhibit 1).⁴ These determinants of health disproportionately affect those in low-income brackets.⁵

Given Medicaid's role in serving people with complex clinical, behavioral health, and social needs, state Medicaid agencies are uniquely positioned to identify and help address these diverse social challenges. In recent years, many of these agencies have developed strategies to support providers in addressing patients' SDOH that complement more traditional medical care delivery programs. Some state Medicaid agencies have started to integrate coverage for interventions focused on SDOH into new value-based payment models.^{6,7,8} Many Medicaid managed care organizations (MCOs) are also developing interventions that address SDOH by linking clinical and non-clinical service delivery to improve health outcomes and cost efficiencies.⁹ At the federal level, the Center for Medicare and Medicaid Innovation (CMMI) is planning to test whether Accountable Health Communities (AHC) are a cost-effective approach to identifying and addressing select unmet social needs of Medicare and Medicaid beneficiaries across the country.¹⁰

Exhibit 1: Determinants of Health and Their Contribution to Premature Death



SOURCE: Adapted from J.M. McGinnis, et al.⁴

Collecting information on social risks — including access to food and housing and employment status — is a key component of developing and implementing interventions to address these risks. Select providers and health care organizations are pioneering strategies to collect and use patient-level SDOH information to better direct interventions.^{11,12,13,14,15,16,17} These efforts, however, are not universal. Medicaid can play a key role in driving consistent measurement, collection, and use of SDOH data among health plans and providers. Little is known, however, about Medicaid and public health efforts to assess SDOH among Medicaid beneficiaries, including the degree to which standardized SDOH measures are used.

Plans recognize the importance of social determinants and the impact on health [...] and they see it as part of their mission.

Building on previous CHCS work on health-related supportive services in Medicaid, CHCS sought to learn more about SDOH data collection by Medicaid and other state agencies, including whether there was any standardization across programs and how the data was being used. CHCS conducted interviews with more than 30 key informants representing eight states, as well as the Center for Medicare and Medicaid Innovation, the Association for Community Affiliated Plans, and a Medicaid MCO to better understand how states collect and apply beneficiary SDOH data (Exhibit 2). These interviewees represented diverse perspectives, including Medicaid and public health department officials, metrics managers, and experts in data analysis, health information policy, and informatics. Drawing from the interviews, this brief explores: (1) how states define and collect patient-level SDOH information; (2) processes for measures selection; (3) the multi-pronged ways Medicaid and other state agencies are using SDOH data at the patient and population level; (4) challenges to capturing and using SDOH data; and (5) key considerations for Medicaid in advancing SDOH measurement approaches. The information gleaned from the interviews offer valuable early lessons to help policymakers and researchers drive greater and more consistent collection of patient-level SDOH information.

Early State Efforts to Define SDOH and Collect Information

States are leveraging several federal programs, as well as their existing authorities, to go beyond traditional medical care and address the behavioral health and social needs of patients. Medicaid health homes, for example, are required to provide highly coordinated care across providers and settings, including community and social services, to address the chronic physical and behavioral health needs of high-risk beneficiaries. The State Innovation Models (SIM) initiative requires Round 2 Test states to develop a statewide population health improvement plan focused on addressing SDOH and reducing health inequality.^{18,19} As Medicaid and other payers move toward value-based purchasing arrangements and total cost of care reimbursement, there is a business case for providers to deploy a range of cost-effective, non-clinical interventions to improve population health and reduce avoidable costs.

Various national organizations are in the early stages of standardizing SDOH data collection and measurement protocols for providers to administer at the patient level. The National Association of Community Health Centers, for example, has piloted the PRAPARE assessment tool, which aligns with: (1) national initiatives prioritizing social determinants (e.g., Health People 2020); (2) measures proposed under the next stage of Meaningful Use; (3) clinical coding under ICD-10; and (4) HRSA's Uniform Data System for health centers.²⁰ The Health Leads Screening Toolkit helps providers screen for social needs using various options from federal agencies, including electronic health record (EHR) guidelines from the National Academy of Medicine/Institute of Medicine (IOM) Committee on Social and Behavioral Domains.²¹ In 2014, the IOM released recommendations on 12 measures of social and behavioral determinants of health that should be included in every patient's EHR.²² Through the Accountable Health Communities program, CMMI will develop a standardized social screening tool to help build the evidence base around

Anything that is a classic health determinant we can rule out. But anything else is fair game. That lack of consensus, decision [...] that is one of the issues. When you choose five or 10 areas, someone is going to want to know why you didn't choose these other three.

effective assessments of SDOH, focusing on housing, food, utilities, interpersonal violence, and transportation.²³

Exhibit 2: Current Data Collection on Common SDOH Domains in Select States*†

SDOH Domains	KS	MA	MI	NY	OR	TN	VT	WA
 Housing	✓	✓	✓	✓	✓	✓	✓	✓
 Family and Social Support	✓	✓	✓	✓		✓	✓	✓
 Education and/or Literacy	✓	✓	✓		✓		✓	✓
 Food Security		✓	✓		✓	✓	✓	✓
 Employment	✓	✓	✓	✓	✓	✓	✓	✓
 Transportation		✓	✓				✓	✓
 Criminal Justice Involvement	✓	✓		✓	✓		✓	✓
 Intimate Partner Violence		✓		✓	✓			

*Data collected from Medicaid beneficiaries at the individual and/or population level.

† Data not systematically collected on the entire Medicaid population.

Such efforts are relatively nascent, and therefore standardized measures and a consistent approach to measuring SDOH have not yet been adopted.²⁴ In the absence of a commonly accepted definition and standardized SDOH measures, there is significant variation in how states are collecting, using, and reporting this information (Exhibit 3). This variation is similar to the early movement toward standardized clinical quality measurement. Some providers, communities, and states are using “home grown” SDOH measures to obtain the information needed to inform interventions and care delivery. During the interviews, state-based officials also noted the lack of a common definition of SDOH across all Medicaid providers, plans, and community social service organizations. While there appears to be general agreement about broad SDOH categories that are relevant to health — housing, employment status, and food security — some states also include behavioral health or functional, cognitive, and behavioral risk factors as social determinants. Note, for the purposes of this brief, the term “measures” is used broadly, referring to questions used in surveys/assessments, indicators, variables, and other mechanisms for assessing SDOH.

As a consequence, there are significant limitations on the degree to which SDOH information can be aggregated across care settings, limiting its usefulness from state policy, health services research, and payer perspectives. The variability also poses challenges and administrative burdens for plans and providers that are often required to track numerous, varied measures under different reporting requirements.

As greater numbers of providers adopt SDOH-based interventions for low-income populations, there is a growing need for standardized SDOH measurement, which presents a new opportunity for Medicaid agencies, as well as for national organizations focused on measurement standards. To facilitate data collection, Medicaid can play an important role in both developing reporting requirements as well as bringing standardization to the measurement process.

Exhibit 3: Select State-Level SDOH Data Collection for Medicaid Beneficiaries

State	Program/Agency	Purpose for SDOH Data Collection	Collection Mechanism/Tool
KS	KanCare State Quality Strategy and Performance Measures for MCOs/Kansas Medicaid	<ul style="list-style-type: none"> Inform provider quality improvement Identify member needs and support them more broadly, beyond health care services delivered 	<ul style="list-style-type: none"> MCO Health Risk Assessments Member surveys (CAHPS, mental health) Provider data systems to track National Outcome Measures (NOMs) Cross-agency data systems
	MassHealth Risk Adjustment Model for SDOH/MassHealth and University of Massachusetts	<ul style="list-style-type: none"> Provide data for risk adjustment model to capture the impact of SDOH on medical expenses and set reimbursement rates for MCOs and future ACOs 	<ul style="list-style-type: none"> All analytic variables are derived from existing administrative data or diagnosis codes from claims (or encounter) records
MA	Massachusetts Department of Public Health	<ul style="list-style-type: none"> Inform quality improvement framework for programmatic activity Assess how SDOH are impacting the health of populations in programs and surveillance sets 	<ul style="list-style-type: none"> Population surveys Surveillance of primary care
	Medicaid health plan population health management programs/ Michigan Medicaid	<ul style="list-style-type: none"> Inform MCO-administered: <ul style="list-style-type: none"> Population health management program; Community health worker program; and/or Other procedures to address SDOH 	<ul style="list-style-type: none"> MCOs multi-year plan incorporates SDOH into their process for analyzing data to support population health management Health risk assessments Provider performance measurement reports
MI	Michigan Pathways to Better Health/ Michigan Public Health Institute and Michigan Department of Health and Human Services	<ul style="list-style-type: none"> Develop care coordination strategies Inform program evaluation 	<ul style="list-style-type: none"> Comprehensive checklist on tablets used by CHWs
	Health Homes /NY State Department of Health	<ul style="list-style-type: none"> Inform rate-setting Evaluate health home performance and inform evidence-based practices 	<ul style="list-style-type: none"> Medicaid Analytics Performance Portal High-Medium-Low Monthly Billing Assessment Questions Functional Assessment of Cancer Therapy – General Population (FACT-GP)* Health Homes Functional Questionnaire*
OR	CCO Pay for Performance Program Performance Improvement Projects (PIP)/Oregon Health Authority	<ul style="list-style-type: none"> Inform incentive program and voluntary performance improvement projects for CCOs to improve quality of care and achieve clinical/population health outcomes 	<ul style="list-style-type: none"> Claims data, EHR-data, survey data, additional collection efforts Provider-clinic level EHRs to collect behavioral determinants (e.g. tobacco use) and food insecurity screening data
	Medicaid Behavioral Health Risk Factor Surveillance System (MBRFSS) Survey	<ul style="list-style-type: none"> Examine SDOHs by CCO 	<ul style="list-style-type: none"> MBRFSS Survey
TN	TennCare’s MLTSS program/ Tennessee Medicaid	<ul style="list-style-type: none"> Inform care management and coordination for members Identify areas where state needs to focus resources to strengthen system overall Inform program evaluation 	<ul style="list-style-type: none"> MCO comprehensive needs assessments Standardized employment data sheet for HCBS members Housing profile assessment report National Core Indicators
VT	Support and Services at Home/ Vermont Blueprint for Health	<ul style="list-style-type: none"> Develop person-centered care plans and care coordination strategies aimed at meeting individuals’ goals 	<ul style="list-style-type: none"> SASH assessment
	Integrated Communities Care Management Learning Collaborative (Collaborative effort among several agencies)	<ul style="list-style-type: none"> Develop person-centered care plans and care coordination strategies aimed at meeting individuals’ goals 	<ul style="list-style-type: none"> Shared Care plans and Care Coordinator Assessment Eco Map Camden Cards Root Cause Analysis worksheet Care Management Chart Review Tool

*To be discontinued January 2017.

State Efforts to Select SDOH Measures

Selecting existing SDOH measures, or developing new measures, and implementing programs to collect the data can be a challenging process. It involves:

1. Identifying SDOH priorities and associated measures;
2. Outlining measure specifications;
3. Creating a data collection mechanism; and
4. Making the case to health plans and providers to collect SDOH information to support care management, quality improvement efforts, and total cost of care management.

Identifying and developing SDOH measures ideally involves a range of key stakeholders from the outset, including MCOs; research and measurement experts; providers; medical directors; health information technology experts; and quality improvement and practice transformation representatives. Collectively, these stakeholders define the purpose of measuring health-related social needs, and achieve consensus on which SDOH domains (e.g., employment, education, housing, food security) to use. The next step is to define the criteria used to select existing measures or develop new ones. States may choose to tap into existing quality measurement infrastructure, such as quality measurement workgroups or technical advisory committees, to accomplish this work.

In **Oregon**, the Oregon Health Authority (OHA) staffs a legislatively established committee charged with selecting measures for its Coordinated Care Organizations (CCOs), Oregon’s accountable care organization (ACO) model, which has expressed interest in developing SDOH measures. Most recently, a technical advisory group and stakeholders have developed a provider-level food insecurity screening measure that CCOs can select as an optional performance measure. OHA will also develop housing-related measures to incorporate into its measurement roadmap and proposed CCO-led Coordinated Health Partnership pilots, pending 1115 waiver approval. Once initial measures are developed, OHA will phase in data reporting and paying for outcomes.

In **Washington State**, legislation requires the state to develop SDOH measures focused on housing stability, employment outcomes, and criminal justice involvement, with the anticipation that the state will eventually incorporate these measures into the state’s clinically oriented Common Measures Set.²⁵

As part of the MassHealth Social Determinants Project, **Massachusetts** recently developed a “neighborhood stress” measure based on a beneficiaries’ home address. This neighborhood stress score, which has been incorporated into their model for making risk-adjusted global capitated payments to MCOs, is a composite measure of economic stress, combining a number of SDOH variables including income, employment, education, and transportation.²⁶

When KanCare, **Kansas’** Medicaid program, incorporated existing behavioral health and home- and community-based (HCBS) measures — including a number of SDOH indicators — into its managed LTSS basic performance and pay for performance measures, those measures were vetted by a sub-cabinet group within the Department of Health and the Environment. In addition, KanCare’s External Quality Review Organization also conducted a validation process to look at data sources and ensure that the state was receiving technically sound information to guide program-funding decisions.

Using SDOH Data at the Patient and Population Level

State agencies take a range of approaches to collecting and using SDOH data, which fall under the two general categories: (1) targeted patient-level interventions; and (2) population-level strategies.²⁷

Depending upon the level, Medicaid agencies and public health departments use either existing state data sources (e.g., vital records, information collected by school-based health centers and substance use service agencies) or patient-level collection mechanisms (e.g., health needs assessments) to gather SDOH

data. Viewed holistically, states are generally deploying multi-layered SDOH data use strategies. For example, states use SDOH data for patient-level care management as well as for sub-population program analysis and payment incentives. This section describes each of the uses uncovered in our interviews and provides specific state examples.

Targeted Patient-Level Interventions

States use individual-level SDOH information for targeted patient programs to determine eligibility for services, direct care management, and guide clinical decision-making. Several states described using specialized assessment tools that routinely capture data on a number of SDOH domains, including incarceration, homelessness, and social isolation. The individual-level information is used to determine eligibility for services, such as HCBS services or housing support, to link beneficiaries with specific community and social supports, and identify screening needs among high-risk individuals. A number of state Medicaid agencies are collecting patient-level SDOH data to enhance care delivery to specific populations, specifically those with complex health care needs.

In **Michigan's** Pathways to Better Health program, community health workers (CHWs), during in-home visits, use tablet-based checklists to identify the greatest needs of program participants, including employment, education, housing needs, and food security. The data collected are available through a web-accessible database, which makes sharing the information with authorized staff and practitioners more feasible. **Washington State's** PRISM application, jointly supported by the State's Health Care Authority and Department of Social and Health Services, contains some SDOH data elements collected at the patient level that are used to inform care planning and target care coordination to high-risk, high-need Medicaid and dual Medicare-Medicaid populations.

In **Vermont**, the Support and Services at Home (SASH) model uses individual SDOH data to connect low-income seniors and adults with disabilities with community-based services, and to promote care coordination.²⁸ Data are collected via a uniform assessment tool, which participating housing organizations are required to administer on a periodic basis. The tool includes validated screens and surveys for food insecurity, substance use, tobacco use, and social isolation. With the launch of a new electronic shared care plan, SASH enrollees, in collaboration with care managers, will be able to identify social risks and work toward meeting SDOH-related goals.

New York's Medicaid health home program, which targets individuals with multiple chronic conditions, uses a required functional assessment questionnaire at enrollment, annually, and at discharge to collect information regarding member homelessness and social supports. The data are used in conjunction with Medicaid claims data to evaluate utilization and quality of care for members served by health homes. New York has elected to discontinue use of the current Health Homes functional assessment questionnaire at the end of 2016 and instead adopt a different assessment to improve data integrity and accuracy.

Some states require MCOs to use a comprehensive needs assessment (CNA) conducted by a health care professional to identify new enrollees with care management and social needs and to develop a care plan in response. In some cases, the CNA is developed by the MCO and approved by the state. In other cases, such as **New Jersey**, the state developed a standard template CNA in collaboration with the MCOs.²⁹ The state's managed care contract outlines requirements for collecting SDOH data and an MCO care management workbook includes more specific details, such as when to complete the CNA for select high-need populations.³⁰ **Tennessee** Medicaid (TennCare) requires MCOs to assess the SDOH of its managed long-term services and supports (MLTSS) population using customized CNAs developed by the MCOs; MCOs are then required to address any identified social needs in member care plans. The state requires MCOs to report only on housing and employment using state-generated templates.³¹

To varying degrees, over the last two decades, as we've used Medicaid more as a funding mechanism for those [Behavioral Health and HCBS] services, we've tried to bring along those good practices and the broader perspective about the person being supported rather than just the health care service being delivered.

Several states highlighted the importance of building and utilizing integrated, cross-agency data systems to house SDOH information. **Vermont's** goal is to ensure that there are care and case management systems in place across both public and private sectors, and that sufficient information can flow across organizations and care systems to support optimal, integrated care at the patient level. There are several technologies currently being tested by provider organizations and within state government, including through the Integrated Community Care Management Learning Collaborative and OneCare Vermont, a statewide ACO that recently launched its Care Navigator care coordination tool.³²

Population-Level Approaches

States use population-level SDOH information for surveillance, program evaluation, and other purposes to examine how social factors: (1) influence communities and sub-populations; (2) impact interventions' effectiveness and outcomes; and (3) how social factors relate to one another. **Massachusetts, Washington, and Vermont** use population-level SDOH data for surveillance and monitoring by leveraging existing state and federal data sets such as hospitalization data, vital records, household survey data, and Behavioral Risk Factor Surveillance System data. For example, the Massachusetts Department of Public Health catalogues over 40 SDOH domains, drawing from more than 300 data systems across state agencies. The state plans to create a linked database that will include information on a variety of factors that affect health.

The **Vermont** Social Vulnerability Index (SVI), developed by the Department of Public Health, is a planning tool for identifying the relative social vulnerability of populations across the state and is used in the event of a disease outbreak or emergency to identify regions in need of assistance.³⁴ SVI, which is also being used in **New Hampshire**, gathers 16 measures of vulnerability from three domains—socioeconomic, demographic, and housing/transportation—and maps census tracts with higher prevalence of poverty, unemployment, income, education, and insurance status.

Several state Medicaid agencies request or require their MCOs to submit plans detailing how they will analyze data to address SDOH in their patient population. Beginning in 2016, Michigan's Medicaid MCO contract includes provisions related to population health management, which emphasizes collection and use of SDOH data.³⁵ The MCOs must submit a multi-year plan to incorporate SDOH into their data analytics process for addressing health disparities; improving community collaboration; and enhancing care coordination, targeted interventions, and complex care management for high-risk populations. **Michigan's** MCOs, which are developing a core set of SDOH that providers will include in performance measure reports, must report on the effectiveness of population health management initiatives. This includes efforts targeting enrollees who are experiencing a disparate level of social needs such as transportation, housing, food access, unemployment, or inadequate level of education. Initiation of these and related population health management activities were further incentivized through the Michigan Medicaid managed care 2016 performance bonus.

Rate-Setting and Risk Adjustment

A more recent and innovative development is that some states use patient-level SDOH data in risk adjustment calculations and to set reimbursement rates for providers. **New York State's** Health Homes program uses a monthly billing assessment questionnaire to determine the monthly acuity rate for each member (high, medium, low).³⁶ In addition to clinical rate adjustments, there are functional adjustments derived from questions that collect SDOH information related to incarceration, interpersonal violence, and homelessness.

CareSource: Connecting Enrollees with Life Services

CareSource, a Medicaid MCO in Ohio, is using a coordinated approach through its Life Services program to connect interested enrollees in select counties with employment and educational opportunities.³³ Using a survey and resource assessment, the MCO collects self-reported data every 90 days to capture enrollee employment status, educational status and resources, sources of income, assets/debts, food security, housing, transportation, family/social support, and criminal background. Though not required, the Medicaid MCO shares quarterly updates and aggregate data with the Ohio Department of Medicaid.

MassHealth has incorporated SDOH variables into its risk adjustment model to capture the additional effect of SDOH on medical expenditures after including the DxCG³⁷ relative risk score that captures age, sex and the medical conditions recorded in International Classification of Disease (ICD) diagnoses on medical claims (“encounter” records). The model adds specific adjusters, such as homelessness, substance use disorders, and a composite score of neighborhood stress, to calibrate payments to MCOs and future ACOs based on the estimated resources needed to address their members’ needs. Only reliably measured SDOH variables with a conceptually plausible and empirically established relationship to cost were included in the model. The state uses data available in its administrative files, claims, and encounter records submitted by MCOs and will update the risk scores (on which payments are based) for beneficiaries quarterly.

Incentive Programs and Performance Improvement Projects

Embedding measures related to social or behavioral determinants of health into provider and/or health plan incentive programs or performance improvement projects is another strategy state Medicaid agencies are using to advance the collection of social data. As part of its pay for performance programs, the **Oregon** Health Authority has a number of incentive measures that CCOs are required to report. Currently, there are two patient-level measures that focus on *behavioral* determinants of health: (1) tobacco use as a health behavior (measuring prevalence, not screening or use of cessation services); and (2) substance and alcohol misuse screening and brief intervention, which are reported to the state and tied to payment. As an optional performance improvement project, CCOs are also able to select a state-developed food insecurity screening measure. There is growing interest to incorporate more SDOH and health outcome measures into the incentive program and other initiatives. **Kansas** is also encouraging health plans to assess and address beneficiaries’ social needs by integrating SDOH-focused measures into their basic performance and pay for performance programs. MCOs are required to report on these measures and the pay for performance measures, which are paid annually based on outcomes achieved. The state Medicaid agency considers one of the greatest successes of its SDOH measurement efforts to be the ongoing improvement in their pay for performance results, which are reported annually to CMS.

Program Quality Improvement

State agencies are also beginning to use SDOH data as part of a program quality improvement framework and for program evaluation. As referenced earlier, Michigan’s Pathways to Better Health (Pathways) program, which addresses the social service needs of beneficiaries and links them to preventive health care services, uses aggregated patient-level SDOH data for program evaluation, and to better understand the social needs and resources of the communities it serves.⁴⁰ Massachusetts is also using SDOH data to determine if programs are reaching certain populations with social needs and to better understand program effectiveness for those populations.

Challenges to Collecting, Sharing and Using SDOH Information

A number of key informants acknowledged that one of the most significant challenges related to SDOH measurement and collection is the **lack of a consistent definition** and consensus around what constitutes a social determinant. Health providers, community social services, and health plans may have different views about which domains fit under the social determinants rubric, and also consider varying elements and thresholds to meet a particular social determinant (i.e., homelessness).

KanCare’s Medicaid Quality Strategy includes SDOH Measures

KanCare, Kansas’ Medicaid managed care program, has a robust state Medicaid quality strategy that incorporates SDOH domains into required behavioral health, HCBS, and long-term care basic performance and pay for performance measures.³⁸ KanCare MCOs are required to conduct health risk assessments to collect data on certain SDOH from specific populations (e.g., members with severe mental illness, substance use disorders, developmental disabilities) and submit the data quarterly to the state. The state’s quality strategy specifically includes the indicator and measurement; measure specifications; target population; data source for measuring; frequency for measuring/reporting; and reporting benchmarks.³⁹

Informants cited the **lack of standardized, validated SDOH measures** as a major barrier, with several practical downstream challenges. In the absence of standard collection approaches, Medicaid initiatives and health plans may be measuring homelessness and other social determinants using different methodologies, making comparisons among populations and changes over time difficult. States need an agreement on how to standardize the various data collection approaches and ultimately incorporate this information into EHRs. In the absence of uniform collecting and reporting methodologies, the capacity for state agencies, plans, and providers to share data and use SDOH to develop targeted strategies, guide care planning, and make referrals is limited.⁴¹

Another major theme that emerged are the **technical challenges** related to SDOH data collection and sharing. A related challenge is the lack of interoperability across clinical information systems, and the difficulty around extracting SDOH data from EHRs. At the agency and system level, data-sharing agreements are often an important first step in creating the infrastructure required for sharing SDOH data across agencies. When SDOH-related data are “owned” by and housed in different entities, states face the challenges of determining what information is available and how to access it, and figuring out how make data from different sources available. Beyond this, significant in-house capacity and technical expertise are required to use new datasets focused on SDOH.

Administrative barriers were also cited by informants to be a challenge. These can include: (1) gaining buy-in from providers to collect non-clinical information from patients; (2) providing incentives to providers to conduct screens and enter data into EHRs; (3) training staff to use appropriate ICD codes to note social issues; and (4) ensuring that providers have resources to support patients when social needs are identified.

The need to secure the **privacy of data on Medicaid beneficiaries** is top of mind among those who handle clinical and SDOH data. Special attention must be paid to ensure that the privacy of patients’ social and behavioral health information is maintained when sharing digitized information across providers, agencies, and plans.⁴² Despite the recent surge in SDOH research, there has been little analysis of ethical challenges surrounding routine data collection.⁴³ The legal and regulatory landscape surrounding what data can be shared, with whom, and for what purposes can be a source of confusion and caution. This is particularly challenging in the area of social services, such as housing and food support, where data cannot be easily shared and agencies often lack technical sophistication. Social service agencies are also not restricted by the Health Insurance Portability and Accountability Act, which complicates sharing certain data between providers and agencies.

Identifying sources of financial support to develop and sustain SDOH measurement efforts is another challenge. In some cases, SIM grants have provided initial support. For example, **Washington State’s** Analytics, Interoperability and Measurement initiative is using SIM funds to develop a claims-based dashboard that will be integrated with Department of Health survey measures. This integrated dashboard system will provide the State’s Accountable Communities of Health with the ability to identify poor health outcomes as well as the clinical issues that might have an impact on population health. The state is working to integrate some population health measures, and potentially social determinants of health data, into the Healthier Washington Data Dashboard. **Vermont’s** SASH program was originally funded through Medicare’s Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration, but now receives support from Medicaid, several state agencies, and foundations. Medicare will continue to participate in SASH following the end of the MAPCP Demonstration under Vermont’s new All-Payer Accountable Care Organization model. In an effort to sustain the Pathways program in **Michigan**, which was initially funded by a CMS award, staff have developed a payment model that reimburses CHWs based on a social need being met as opposed to encounters or time spent with a patient. The payment model is currently being considered by MCOs.

We learned some lessons around being more proactive and prescriptive about what to ask and how to ask it. Each of them [MCOs] have their own impressive approach and tools. What we are talking about [...] is making a standardized tool that has more of those social issues or broader life issues and risk areas addressed in a standardized way with some protocol to follow up and some reporting components.

For MCOs, SDOH assessments must be paid for using administrative fees. However, the Medical Loss Ratio requirement limits the portion of premium dollars health insurers may spend on administration, marketing, and profits, thus posing financial barriers to focusing on these issues. As such, financial support may be required to implement and sustain these initiatives. The Medicaid Management Information System federal match is a potential funding source that Medicaid agencies could leverage to develop an analytical data infrastructure that supports cross-sector data sharing.

Considerations for Advancing SDOH Measurement Approaches

Framework Development

State Medicaid agencies should consider working with relevant stakeholders to develop frameworks that guide the collection and strategic use of SDOH data and that facilitate standardization and scaling.⁴⁴ States will need to: (1) define SDOH domains of interest; and (2) develop guiding principles for measuring and reporting patient-level SDOH; and (3) identify how SDOH data will be used for activities like care coordination and referrals, population health surveillance, program evaluation, or clinical care transformation, since each of these kinds of activities will influence measure selection and collection.

Measure Development and Selection Process

Establishing a standardized approach to measure selection/development and data collection will help providers and Medicaid plans to better direct clinical care to meet the needs of their patients. States should apply the lessons learned from quality measurement selection and standardization to guide the development of their SDOH measurement approach. For example, careful inclusion of key stakeholders early in the process is essential. To garner support and establish SDOH data collection and measurement as a shared responsibility, it is important to demonstrate support from public health stakeholders; achieve coordination at the community level; and highlight practical ways that public health, plans, and providers can work collaboratively. Engagement of stakeholders, including state agencies, providers and plans, in the development and testing of measures will ensure that areas of concern — for example, changes to workflow — are addressed early in the process.

Until standardized measures for SDOH are available, state Medicaid programs might consider adopting already developed assessment tools, such as NACHC's PRAPARE tool or the Health Leads toolkit, or measures within those tools, to ensure that patient-level information on social determinants are being measured consistently across populations and programs. To advance the field of SDOH measurement, measure developers, endorsers, and accreditors, such as the National Quality Forum, the National Committee for Quality Assurance, and the Joint Commission, should consider how they could orient their work to support the development and use of core SDOH measure sets.

Data Collection and Data Sharing

States will need to be strategic about the level and source from which SDOH data is collected. SDOH information at the patient-level may most easily be obtained at the point of eligibility determination and through comprehensive needs assessments. States embarking on new measurement initiatives may want to start by collecting SDOH data from targeted sub-populations within a specific program. Medicaid agencies interested in collecting SDOH information from other state sources will need to identify available data sources and develop data-sharing arrangements with relevant agencies.

Data integration and sharing among state agencies and health plans requires careful attention to privacy and security concerns, including the establishment of data agreements that support exchange. States may want to: (1) look for natural alliances among agencies that have common interests and shared populations, for example housing, food assistance, and criminal justice; and (2) engage current data owners in governance and agreements processes.

Deployment

It will be useful to establish a structured approach for monitoring and evaluating implementation of SDOH data collection. This monitoring can be developed separately, or incorporated into existing quality measurement efforts. It will be important to gather ongoing feedback on the implications of SDOH data collection, including impacts on workflow at the provider level. Medicaid agencies could also consider using MCO contracts to require the routine collection of patient-level SDOH information in more targeted populations.

Medicaid should use caution when implementing a new SDOH-type measure, screen, or billing code and will need to think across all payers. While delivery system changes driven by Medicaid can lead to consistency and broader dissemination, there can be unintended consequences that need to be understood and anticipated for providers who also have patients on commercial plans. For example, introducing a new code for an SDOH screen that is applicable to Medicaid, though not broadly used across commercial health plans, could result in claims being denied for commercially insured patients, and those patients being billed for such screenings. While ICD-10 z-codes, which capture patients' social circumstances, are not yet routinely used by health care providers, their potential for standardizing coding and billing on some SDOH screening domains make them an attractive option.⁴⁵

Payment

Reimbursement policies that are focused on achieving value and reward providers for population health management are encouraging increased attention to modifiable determinants of health.⁴⁶ States and plans may want to test payment models that provide direct incentives and resources for health care providers to identify and address specific social factors among Medicaid beneficiaries through screenings and referrals to social and economic services. In addition, Medicaid agencies should continue to identify sources of funding that can be used to pay for these screening services and for referrals to other providers and infrastructure (e.g. housing, transportation, etc.). As states shift to value-based purchasing, the ability to measure patients' health-related social needs and reward providers for improvement in these underlying factors may be critical.

Conclusion

The growing recognition that non-clinical factors influence the health, outcomes, and cost of Medicaid beneficiaries elevates the importance of gathering information on the health-related social needs of patients in a systematic way. This SDOH data will have an impact on the development, implementation, and investment in interventions designed to enhance vulnerable patients' social circumstance as a means to improving health outcomes and lowering costs. While some states and MCOs are beginning to implement interventions aimed at addressing SDOH, there is more to be done in this area, starting with building capacity to consistently measure Medicaid beneficiaries' SDOH. The field is in the early stages of conceptualizing and using SDOH information. This presents an opportunity for state Medicaid and public health agencies to drive the collection and use of standardized SDOH data. The lessons outlined in this brief can assist states in avoiding the confusion that surrounded initial clinical quality measurement efforts by establishing a uniform approach to defining, assessing, and addressing SDOH.

ABOUT THE CENTER FOR HEALTH CARE STRATEGIES

The Center for Health Care Strategies (CHCS) is a nonprofit policy center dedicated to improving the health of low-income Americans. It works with state and federal agencies, health plans, providers, and consumer groups to develop innovative programs that better serve people with complex and high-cost health care needs. For more information, visit www.chcs.org.

ENDNOTES

- ¹ L.M. Gottlieb, M. Sandel, N.E. Adler. "Collecting and Applying Data on Social Determinants of Health in Health Care Settings." *JAMA Internal Medicine*. 2013; 173(11):1017-20.
- ² Office of Health Promotion and Disease Prevention. *Healthy People 2020*. Available at: <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health>.
- ³ County Health Rankings & Roadmap. Available at: <http://www.countyhealthrankings.org/our-approach>.
- ⁴ J.M. McGinnis, P. Williams-Russo, J.R. Knickman. "The Case for More Active Policy Attention to Health Promotion." *Health Affairs*. 2002;21(2):78-93. Available at: <http://content.healthaffairs.org/content/21/2/78.full.pdf+html>.
- ⁵ S. A. Schroeder. "We Can Do Better — Improving the Health of the American People." *New England Journal of Medicine*. September 2007; 357:1221-1228.
- ⁶ D. Bachrach, J. Guyer, A. Levin. *Medicaid Coverage of Social Interventions: A Road Map for States*. Millbank Memorial Fund. July 2016. Available at: <http://www.milbank.org/publications/medicaid-coverage-social-interventions-road-map-states/>.
- ⁷ A. Spencer, J. Lloyd, T. McGinnis. *Using Medicaid Resources to Pay for Health-Related Supportive Services: Early Lessons*. Center for Health Care Strategies. December 2015. Available at: <http://www.chcs.org/media/Supportive-Services-Brief-Final-120315.pdf>.
- ⁸ R. Mahadevan and R. Houston. *Supporting Social Service Delivery through Medicaid Accountable Care Organizations: Early State Efforts*. Center for Health Care Strategies. February 2015. Available at: <http://www.chcs.org/resource/supporting-social-services-medicare-accountable-care-organizations-early-efforts/>.
- ⁹ L.M. Gottlieb, A. Quinones-Rivera, R. Manchanda, et al. "States Influences on Medicaid Investments to Address Patient' Social Needs." *American Journal of Preventive Medicine*. September 2016, Available at: <http://www.sciencedirect.com/science/article/pii/S074937971630304X>.
- ¹⁰ Center for Medicare and Medicaid Innovation. "Accountable Health Communities Model." Available at: <https://innovation.cms.gov/initiatives/AHCM>.
- ¹¹ L.M. Gottlieb, D. Hessler, D. Long, et al. "Effects of Social Needs Screening and In-Person Service Navigation on Child Health: A Randomized Clinical Trial." *JAMA Pediatrics*. September 2016; 170(11). Available at: <http://archpedi.jamanetwork.com/article.aspx?articleid=2548441>.
- ¹² Robert Wood Johnson Foundation. "Using Social Determinants of Health Data to Improve Health Care and Health: A Learning Report." May 2, 2016. Available at: <https://healthleadsusa.org/wp-content/uploads/2016/06/RWJF-SDOH-Learning-Report.pdf>.
- ¹³ N. Adler and W. Stead. "Patients in Context: EHR Capture of Social and Behavioral Determinants of Health." *New England Journal of Medicine*, 2015; 372:698-701.
- ¹⁴ A. Garg, B. Jack, B. Zuckerman. "Addressing the Social Determinants of Health within the Patient-Centered Medical Home: Lessons from Pediatrics." *Journal of the American Medical Association*. 2013; 309(19):2001-2002.
- ¹⁵ L.M. Gottlieb, M. Sandel, et al., op. cit.
- ¹⁶ A. Garg, M. Sandel, P.H. Dworkin, et al. "From Medical Home to Health Neighborhood: Transforming the Medical Home into a Community-Based Health Neighborhood." *Journal of Pediatrics*. 2012; 160(4):535-536. Available at: [http://www.jpeds.com/article/S0022-3476\(12\)00020-0/abstract](http://www.jpeds.com/article/S0022-3476(12)00020-0/abstract).
- ¹⁷ R. Onie, P. Farmer, H. Behforouz. "Realigning Health with Care." *Stanford Social Innovation Review*. Summer 2012. Available at: http://www.ssireview.org/articles/entry/realigning_health_with_care.
- ¹⁸ Center for Medicare and Medicaid Innovation. State Innovation Models Initiative: Frequently Asked Questions. Available at: <https://innovation.cms.gov/initiatives/state-innovation-models-frequently-asked-questions.html>.
- ¹⁹ H.J. Heiman and S. Artiga. "Beyond Health Care: The Role of Social Determinants in Promoting Health and Health Equity." November 4, 2015. Washington DC: The Henry J. Kaiser Family Foundation. Available at: <http://kff.org/disparities-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>.
- ²⁰ National Association of Community Health Centers. PRAPARE Assessment Tool. Available at: <http://nachc.org/research-and-data/prapare/>
- ²¹ To access the Health Leads Toolkit, visit: <https://healthleadsusa.org/press-release/health-leads-screening-toolkit-equips-providers-to-take-first-step-in-addressing-patients-unmet-social-needs/>.
- ²² N. Adler and W. Stead, op. cit.
- ²³ Center for Medicare and Medicaid Innovation. Accountable Health Communities Model: Frequent Asked Questions. <https://innovation.cms.gov/initiatives/ahcm/faq.html#screening>.
- ²⁴ Robert Wood Johnson Foundation, op. cit.
- ²⁵ Washington Health Care Authority. Statewide Common Measures Set. Available at: http://www.hca.wa.gov/sites/default/files/measures_list.pdf.
- ²⁶ Executive Office of Health and Human Services. "MassHealth Risk Adjustment Model Social Determinants of Health." Presentation, October 14, 2016. Available at: <http://www.mass.gov/eohhs/docs/eohhs/healthcare-reform/masshealth-innovations/1610-risk-adjustment-open-public-meeting.pdf>.
- ²⁷ Robert Wood Johnson Foundation, op. cit.
- ²⁸ Vermont Supportive And Services at Home (SASH). Available at: <http://sashvt.org/>.
- ²⁹ New Jersey Department of Human Services, Division of Medical Assistance and Health Services. Care Management Workbook. July 2015. Available at: http://www.state.nj.us/humanservices/dmahs/news/Care_Management_Workbook.pdf.
- ³⁰ New Jersey Department of Human Services, Division of Medical Assistance and Health Services. Sample MCO Contract. Available at: <http://www.state.nj.us/humanservices/dmahs/info/resources/care/hmo-contract.pdf>.
- ³¹ TennCare, Division of Health Care Financing and Administration. TennCare Employment and Community First CHOICES Individual Employment Data Form. Available at: <http://www.tn.gov/assets/entities/tenncare/attachments/EmploymentDataSheetChoices.docx>.
- ³² Vermont Integrated Community Care Management Learning Collaborative. Available at: http://blueprintforhealth.vermont.gov/implementation_materials/care_management_toolkit.
- ³³ CareSource Ohio Life Services program. Available at: <https://www.caresource.com/caresource-life-services/ohio-life-services/>.
- ³⁴ Vermont Department of Public Health. Social Vulnerability Index. Available at: <https://ahs-vt.maps.arcgis.com/apps/MapSeries/index.html?appid=ffea40ec90e94093b009d0ddb4a8b5c8>.
- ³⁵ Michigan Department of Health and Human Services. Michigan Medicaid Health Plan Contract. Available at: http://www.michigan.gov/documents/contract_7696_7.pdf.

³⁶ “New York Health Homes High, Medium, Low (HML) Billing.” New York Department of Health, Medicaid Redesign Team Presentation. Available at: https://www.health.ny.gov/health_care/medicaid/program/medicaid_health_homes/docs/hh_hml_rate.pdf.

³⁷ DxCG is a proprietary predictive modelling tool that turns health care data into risk scores for individual patients. Scores correlate with the cost of the underlying illness burden that individuals carry. Aggregating the scores of individuals with key attributes generates group-level predictive results that can be applied to answer questions to help providers, employers, and payers to manage clinical and financial risks. Available at: <https://www.verscend.com/solutions/population-health/population-health-analytics/dxCG-intelligence>.

³⁸ Kansas Department of Health and Environment and the Kansas Department for Aging and Disability Services. KanCare Medicaid Quality Strategy. September 2014. Available at: http://www.kancare.ks.gov/download/Attachment_J_State_Quality_Strategy.pdf.

³⁹ Ibid.

⁴⁰ Michigan Public Health Institute. Michigan Pathways for Better Health. Available at: <https://www.mphi.org/projects/michigan-pathways-to-better-health/>.

⁴¹ L.M. Gottlieb, R. Tobey, J. Cantor, D. Hessler, N.E. Adler. “Integrating Social and Medical Data to Improve Population Health: Opportunities and Barriers.” *Health Affairs*, 2016; 35(11):2110-2123.

⁴² N. Adler and W. Stead, op. cit.

⁴³ L.M. Gottlieb, et al., op. cit.

⁴⁴ Robert Wood Johnson Foundation, op. cit.

⁴⁵ L.M. Gottlieb, R. Tobey, et al., op. cit.

⁴⁶ N.E. Adler and W. Stead, op. cit.