

Approaches to Cross-Sector Population Health Accountability



With support from the Robert Wood Johnson Foundation, AcademyHealth launched the Payment Reform for Population Health initiative in 2016 to explore improving community-wide health through the transformation of the health care payment system. As part of their efforts to identify the opportunities and challenges associated with linking payment reform to population health, AcademyHealth contracted with Discern Health to author a paper that explores frameworks for two different financial alignment models that could be used to establish accountability for providers and community entities working together to improve population health. To learn more about the Payment Reform for Population Health initiative, visit www.academyhealth.org/p4bh.

Produced by Discern Health
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Introduction

The United States spends a greater percentage of its gross domestic product (GDP) on health care than any other Organization for Economic Co-operation and Development (OECD) country. That increased spending has not resulted in higher value care as the U.S. continues to lag behind other countries in measures of health care quality, access, efficiency, equity, and healthy lives.¹ As a result, Medicare and other health care purchasers are changing payment structures to emphasize value and improve population health,² and this movement has been accelerating in recent years. A recent survey found that 29 percent of total U.S. health care payments (i.e., both public and private) were tied to alternative payment models (APMs) in 2016, an increase of 6 percent from 2015.³

Value-based payment (VBP) can create incentives for managing population health, through both improved delivery of medical care and enhanced support to address non-clinical, social risk factors. Such non-clinical factors – such as lifestyle choices, nutrition, housing, and transportation – can have a large impact on health status, particularly for low-income populations.⁴ Only 20 percent of a person’s health and well-being is attributed to clinical care, compared to 80 percent attributed to social, behavioral and environmental factors.⁵ Thus, efforts to address social determinants of health can improve population health more substantially than efforts that solely focus on medical care,⁶ and any comprehensive solution to health system performance should integrate clinical and non-clinical services.

While value-based care programs and incentives for addressing population health have become more common, the degree to which the health care system is adopting sustainable strategies and improving population health have been limited to date. The U.S. remains the only developed country to spend more on health care services than on social services,⁷ suggesting that opportunities to address non-clinical health risk factors go unanswered. One response to this concern is to align value-based incentives for the health care system with incentives for community-based organizations (CBOs) working to improve social outcomes. This approach could increase collaboration among disparate organizations to improve population health and increase overall value.

What are Community-Based Organizations (CBOs)?

CBOs are non-profit groups that work at a local level to improve the health and wellbeing of residents. They are commonly located in and serve disadvantaged neighborhoods and populations.

CBOs develop solutions to address priority issues for the population(s) they serve. This can include nutritional services, housing, transportation, and substance abuse prevention and treatment support, among other services.

Partnerships between CBOs and providers can help patients manage their conditions and address the social determinants that can exacerbate them.

As part of its Robert Wood Johnson Foundation-sponsored Payment Reform for Population Health (P4PH) initiative, AcademyHealth is focused on identifying strategies for overcoming the barriers to sustainable funding for community-based population health initiatives that address social determinants of health.⁸ Financial alignment across the health care and social services sectors is a promising strategy in this area. In this paper, we outline two approaches, *parallel risk* and *hierarchical risk*, for aligning incentives so that providers and community entities work together to improve population health.

Bridging the Gap

Over the past 15 years, Discern Health has worked on a variety of efforts to improve health care through efforts and, in some cases, to connect those efforts to social support models. In our experience, it is possible to use incentives and risk-sharing to align the health and social services sectors, but significant barriers must be overcome. A key challenge is the fragmentation of financing within both the health care and the social services sectors. Much of the financing in the human and social services sector is from shrinking discretionary government block grants.⁹ Financing for health care generally flows from public and private sector health purchasers, including Medicare, Medicaid, health insurers, health plans, large employers, and individuals. Total alignment of all funding across the sectors would require enormous centralized coordination, which is infeasible.

Short of total alignment, the federal government may be able to create a degree of alignment without completely overhauling programs across multiple agencies, and without significant transformation of health care delivery. (The federal government has implemented a National Quality Strategy with the goal of aligning government health care purchasing programs, and the NQS does include social determinants to a limited degree.¹⁰) State governments may also be positioned to create meaningful alignment. In addition, managed care plans, health systems, Accountable Care Organizations (ACOs), and other entities that are at-risk for health care costs and patient outcomes can drive alignment by contracting with CBOs and including risk arrangements to align incentives. Given that all entities at risk for health care costs and outcomes are dependent on social determinants, purchasers and at-risk health care providers should seek to engage with CBOs in care management and risk reduction. Aligning risk will promote collaboration across these disparate organizations.¹

Framework for Risk Alignment

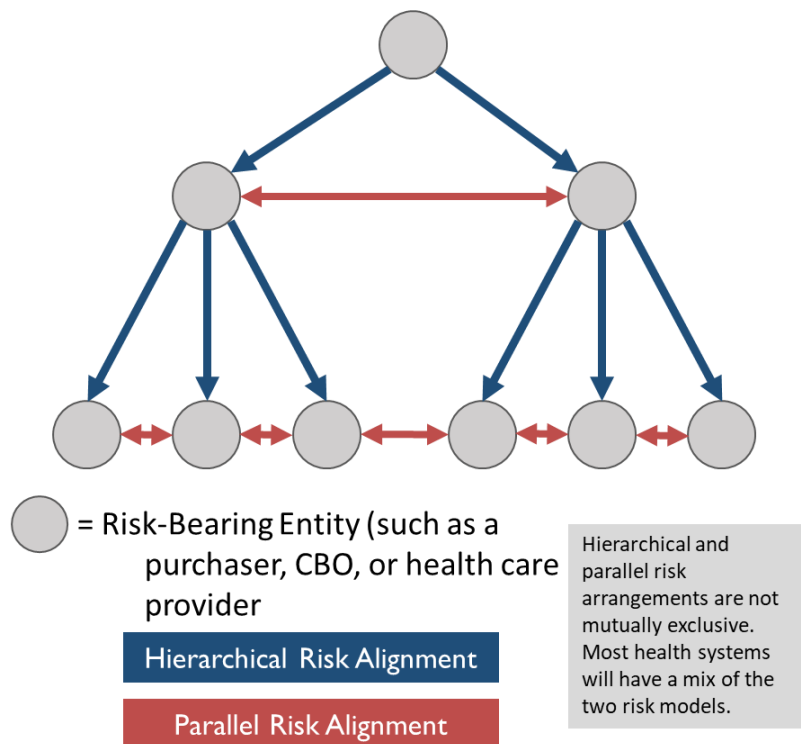
The need for risk alignment is predicated on the idea that health care providers and CBOs are at least partially dependent on each other for the outcomes they achieve (yet their financial revenue have typically been separate). Linking their financial outcomes might motivate cross-

¹ We note that risk alignment, while a necessary ingredient to enhanced collaboration, is not sufficient to guarantee it. Organizations must also align their care processes and systems to ensure that patients get the best possible support.

sector collaboration as it has in health systems that share risk (for example, hospitals and physicians within a single ACO). As noted earlier in this paper, a population’s health status is more dependent on non-clinical factors than it is on medical care. Therefore, it behooves health providers to actively seek ways to address non-clinical factors by sharing risk (and otherwise coordinating) with CBOs.

As illustrated in Figure 1, we propose two fundamental models for sharing risk: *parallel risk* and *hierarchical risk*.

Figure 1. Hierarchical and Parallel Risk



In a hierarchical risk arrangement, risk is transferred down from one entity to another, usually through a formal contractual arrangement. (In Figure 1, these relationships are indicated by the blue arrows). For example, a health plan might transfer risk to an ACO, who would then be accountable for the overall health costs of the ACO population. The ACO might then transfer some of its risk through incentive arrangements with its member provider organizations, who might then use bonus models to transfer risk to individual clinicians. Typically, the higher order entity does not transfer 100 percent of the risk through these arrangements. Rather, it transfers that portion of the risk the sub-entity can manage or influence. For example, a health plan does not transfer 100 percent of the population cost risk to the ACO; it transfers only the risk that the ACO can manage (and limits that risk within specified boundaries).

A parallel risk arrangement is one that exists between two entities that a) bear some risk and responsibility for managing the same patient population, but do not have any formal or hierarchical relationship with each other, and b) are dependent on each to some degree for their own success. (In Figure 1, these relationships are indicated by the red arrows). This is typically the relationship between a health care provider and a CBO. The health care provider will be more effective if the CBO is also effective, but there is no formal relationship between the two.

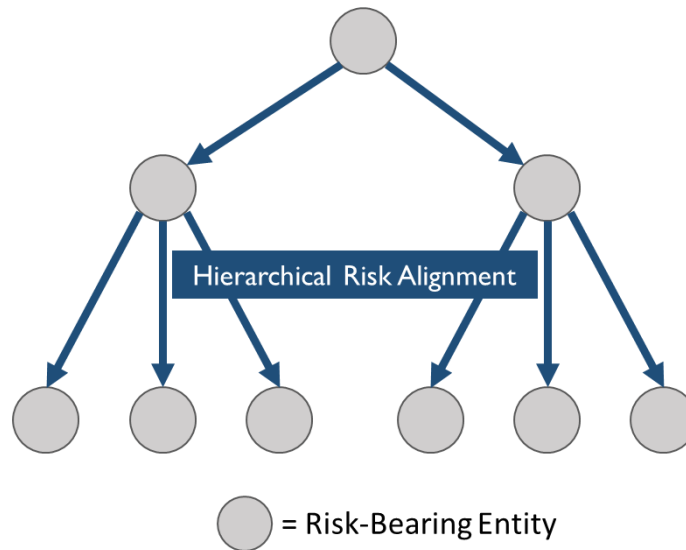
Hierarchical and parallel risk arrangements are not mutually exclusive. Any complex system to manage medical services and health status for a large patient population is likely to have a mix of hierarchical and parallel risk relationships. Defining and aligning those relationships is an important step to ensure that all stakeholders are working together to maximize the benefits for patients.

Hierarchical Risk Framework

In a hierarchical risk framework, health care providers at risk (such as ACOs) identify population management needs and then delegate risk for addressing those needs, creating a high degree of alignment and dependency. While much of the risk delegation by an ACO might be through contracts with health care providers, it could also include CBOs. For example, an ACO might identify transportation to primary care visits as a key need to manage population outcomes, and enter into a risk-based contract with a CBO to provide those services. The relationships with CBOs could include upside risk only, or could also include downside risk to provide a stronger incentive.² In this example, the CBO might get a payment adjustment based on the percentage of patients who receive at least one primary care visit. The ACO and CBO will succeed (or fail, if downside risk is included) together, with perhaps some payment adjustment based on the contributions of individual entities. This approach is very similar to how ACOs currently contract with other providers, such as skilled nursing facilities.

² In an upside risk only arrangement (sometimes called a “one-tailed risk model), the downstream risk entity can share in any financial savings they generate (e.g., through a shared savings payment), but is not responsible for any portion of financial losses. In a downside risk model (sometimes called a “two-tailed risk model”), the downstream entity can share in savings but is also responsible for some portion of losses. Most payment reform advocates favor downside risk models, as they create a stronger incentive to manage costs and they are more sustainable in the long-term. However, upside risk only models can be a useful transitional model as health care organizations mature in their ability to manage risk.

Figure 2. Hierarchical Risk



The process of determining the amount of savings (or losses) that would be attributed to the interventions provided by a CBO would be complex, and would be dependent on the contribution the CBO makes to the health outcomes and financial results captured by certain shared performance metrics. (See page 6 for more discussion on metrics appropriate for a hierarchical risk framework.) A more feasible approach might be to pre-determine the amount or percentage of savings that the CBO would earn based on defined performance targets.

A hierarchical risk arrangement does not necessarily require any action by the top-level purchaser. Rather, by transferring risk to an intermediate entity such as an ACO, they have established incentives that will lead that health care entity to pursue risk-based partnerships with other entities.

Example 1: Hierarchical Risk Model in Practice

Based on its measures, results and financial performance, an ACO may determine that it needs to better manage the outcomes and costs for its diabetes patients to achieve performance goals. The ACO decides to contract with a CBO that provides in-home nutrition services to prevent exacerbations that lead to hospital stays. As part of their value-based agreement, the CBO has performance metrics to which it is held accountable. It must provide services to 200 diabetic patients per month, and the hospital admission rate for this population must stay under 5 percent. If these performance goals are met, the CBO is eligible to receive shared savings.

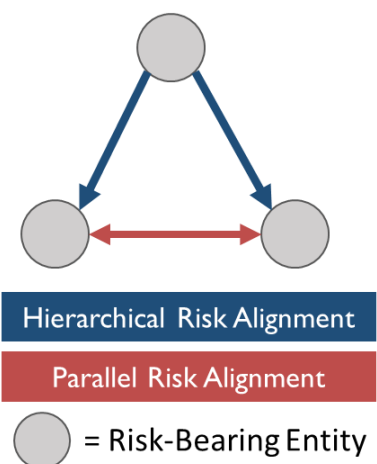
Parallel Risk

In a parallel risk framework, health care providers and CBOs have no direct financial relationship, and funding streams are not integrated. Rather, health care providers and CBOs are accountable for the same or similar cost and patient outcomes, and their separate funding streams incorporate bonuses or penalties based on the same or similar metrics. While this framework does not establish the same level of incentive for alignment as a shared risk framework, it can create a level of meaningful alignment. For example, the health care provider and the CBOs may both be at risk for access to primary care services. Even if the funding streams are separate, the presence of a shared performance goal which is tied to financial incentives will encourage these organizations to collaborate.

In some cases, there may be a single upstream entity which delegates risk to both the health care provider and the CBO, as illustrated in Figure 3, at right. (For example, a state Medicaid agency might have contracts with provider organizations and separate contracts with CBOs.) In this scenario, there is hierarchical risk delegated by the top-level entity to its sub-contractors. If the top-level entity designs its risk models to be consistent across sub-contractors, then it will create parallel risk for the entities which creates an incentives for them to work together,

In other cases, there will be more than one upstream entity, each of which contracts with organizations to serve patients. These different entities might include various government agencies, or a mix of public agencies and private health purchasers. This model requires more deliberate coordination, since there is no single point where risk and responsibility converges. Ideally, the various federal funding streams from agencies focused on health, housing, labor and workforce development, transportation, and other social services that are distributed to states and communities would be integrated so that communities are able to make priority investments as they see fit. However, as noted in the *Introduction*, this approach would require a complete overhaul of many programs, which is not likely.³ However, the inclusion of shared performance metrics (such as those listed later in this paper) in these various funding programs that link to health care performance metrics used in Medicare and Medicaid would drive alignment on the ground level.

Figure 3. Parallel Risk (Single Upstream Entity)



³ The integration of health care and social support spending, while unlikely in the U.S., is not impossible. Scotland recently enacted a law that consolidates health and social care programs. See: <http://www.gov.scot/Topics/Health/Policy/Health-Social-Care-Integration>

Example 2: Parallel Risk Model in Practice

Expanding in Example 1 above, while the nutrition services CBO is contracting with an ACO, 85 percent of its funding is from federal and state grants. The state Department of Agriculture decides to partner with the state Medicaid agency to include a Medicaid hemoglobin A1C measure as a performance goal for the nutrition education grant the CBO received. The CBO is eligible for a 10 percent bonus on its Department of Agriculture funding if the performance goal for this measure is achieved. The CBO is only required to submit a list of Medicaid recipients it has served; the state agencies determine measure performance and the bonus.

The Best of Both Worlds: Use of Both Hierarchical and Parallel Risk

The hierarchical risk and parallel risk models are not mutually exclusive and would be reinforcing when used together. As illustrated in the example of the nutrition services CBO, CBOs continue to receive existing streams of grant funding even if they contract with health care providers. If the CBO was to develop parallel risk arrangements with a Medicare ACO as illustrated in Example 1, for instance, in addition to receiving performance incentives in their Department of Agriculture grant program for achieving good outcomes for Medicaid beneficiaries, the performance goals of the nutrition services CBO would begin to align across both payers. Related performance goals can also be established for dietitians and CHWs working for the CBO. Moreover, this alignment and focus on high performance would likely position the CBO to expand its reach, either through other grants or through contacts with additional health plans and health care providers. For example, a Medicaid managed care plan might be interested in contracting directly with the CBO to provide services to its members if the health plan has already implemented Medicaid diabetes measures.

Foundations of Cross-Sector Alignment

Establishing hierarchical and parallel risk partnerships will involve a learning curve for each entity in the risk chain, including purchasers, health care providers, and CBOs. While a conceptual understanding of risk may exist within providers, the operational requirements of successfully performing in such an environment may be poorly understood, and providers may not be prepared. This is illustrated by the low percentage of provider organizations voluntarily participating in two-sided Medicare ACO models. While movement has been slow in the health care sector, the social services sector has even less experience in managing risk or creating risk-based contracting models, creating further barriers to alignment.

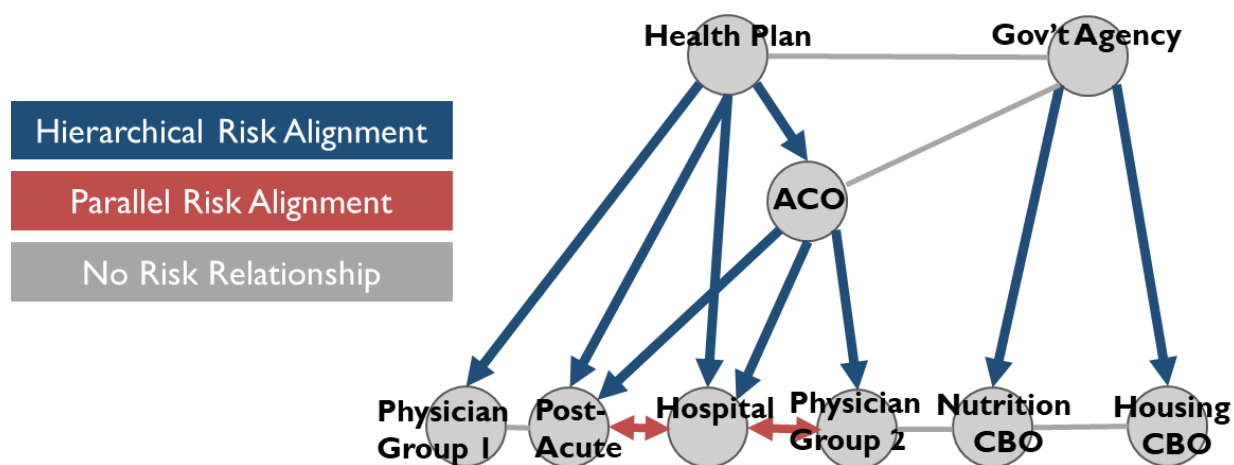
For successful and sustainable implementation of hierarchical and parallel risk to occur, barriers need to be addressed. In this section, we outline foundational components that can provide an on-ramp to cross-sector alignment.

Inventory the Organizations and Their Relationships

An initial step to setting up shared risk arrangements is to inventory the relevant organizations and define their relationships. Start by identifying the patient population, and then identifying those organizations that address the important health and social needs of a significant portion of that population. These organizations may include purchasers, health care providers, and CBOs. The next step is to classify the risk arrangements among these various organizations. Some of the existing relationships may be hierarchical risk arrangements (such as between a health plan and an ACO). More rarely, there may be some parallel risk arrangements. Many, perhaps most, of the organizations will have no existing risk relationships.

A simplified example of a risk relationship schematic is presented in Figure 5. In this example, a purchaser (health plan) and a government agency are providing separate, disconnected funding streams for medical and social services, respectively. The health plan has direct contracts with providers, through which it delegates some risk. It also has a risk relationship with an ACO, which then delegates some of that risk to its providers. In this example, the ACO has created parallel risk for its providers, perhaps by measuring them all on hospital readmissions and thereby creating an incentive for them to collaborate to reduce readmissions. In addition, there is an opportunity to create parallel risk alignment between the medical providers and the CBOs, who could also help reduce the readmission rate.

Figure 5. Example of Risk Inventory



Establishing Common Goals

A key foundation for hierarchical and parallel risk is agreement on priorities and objectives for prevention and population health improvement and working collaboratively to achieve these common goals. Processes such as community health needs assessments, which are required of non-profit hospitals to retain their tax-exempt status, may be used to identify priority areas, set targets for improvement, and establish common metrics to monitor progress over time. These

processes may also be useful in helping purchasers and health care providers identify appropriate CBO partners.

Once goals and improvement targets are set, metrics should be established around these goals. Shared responsibility for outcomes are integral to hierarchical and parallel risk partnerships with CBOs. As illustrated in Table I, these shared metrics may be defined differently for health care providers and CBOs, though they should still all contribute towards improving an appropriate population-level metric.

Governance and Structures for Collaboration

Transitioning to an overarching population health-focused risk model requires buy-in from stakeholders and key decision makers within the organization who may share risk with one another, as well as from health care purchasers. It also requires agreement on the risk-sharing model that will work best for specific needs and contexts. Alignment and partnerships benefit greatly from collaborative organizational structures and governance models that include both health care providers and CBOs, such as regional health collaboratives. These types of entities can be useful in establishing common goals and monitoring progress, and can also be used facilitate the identification of critical issues and barriers and strategies to overcome them using a shared decision-making process.

Data Infrastructure

Effective collaborations also require health information technology and data sharing infrastructure. To be most effective, CBOs need access to patient-level information, including meaningful population health risk data. CBOs also need access to regularly updated performance metrics to assess their own progress and engage in quality improvement.

Example 3. Real World Risk-Sharing Opportunities

In 2015, Discern Health completed a project for [LeadingAge](#), an association of not-for-profit organizations representing the entire field of aging services, including supportive housing for seniors. The project focused on the potential benefit of senior housing on quality and cost measures used for Medicare ACOs. The project outcome, [Talking with Health Care Entities about Value: A Tool for Calculating a Return on Investment](#), detailed the various ways in which senior housing providers could help ACOs achieve their mission, such as reducing complication rates associated with chronic disease.

Discern also worked with Presbyterian Senior Living, a supportive housing provider, to document their model for engaging with residents to manage their health. The project produced [measurable reductions in hospitalizations and emergency room visits](#) for their partner ACO.

Such collaborations between housing providers and health care providers is an example of a medical/social support model for which risk-sharing models can pertain.

A key barrier for both providers and CBOs is a lack of data on the total cost of care, and insight into specific opportunities to reduce cost (for example, by comparing specific types of costs to relevant benchmarks and focusing on negative variance). Collecting and analyzing data may be needed for health care providers and CBOs to develop a shared understanding of the cost of care. Rich cost data are also needed, in concert with performance metrics, to assess and identify the contributions of various entities within a partnership for the purposes of determining incentive payments.

Pilot Programs and Funding

Pilot collaborations between providers and CBOs can address barriers and accelerate alignment. In these collaborations, some barriers are only identified once a program is in place. Pilot programs can help illuminate these issues and address them more easily, given the limited scale and reach of the program. This kind of real-world information offered by pilot programs can help organizations identify their shared strengths and capacity, improve their approach, set up the needed infrastructure, and ultimately lay the groundwork to scale the partnership.

The small wins offered by pilot programs can also rally grassroots support from providers and CBOs. For example, clinicians may be reluctant to perform screenings for social determinants of health until they know there is a dependable organization to which the patient can be referred. Therefore, the transformation process can be accelerated to the extent that pilot programs offer clinicians evidence that CBOs will grab the baton when it is passed to them. Awareness of shared measures and risk is one way to create the necessary trust. Over time, positive results will strengthen and sustain that trust.

In addition, developing a pilot program may position the partners to seek start-up funding from outside funders. With this start-up funding, the partners can begin to implement the infrastructure and process changes required, and work towards identifying a pathway to sustainability. There is a growing precedent for start-up funding in the form of grants to be followed by a transition to an operationally sustainable funding model, as in the case of the Columbia Gorge CCO's pilot community health worker (CHW) program and the Texas Community Centered Health Homes (CCHH) Initiative.^{11, 12}

Measuring Cross-Sector Population Health

Tracking population health is necessary to determine the overall value offered by the health care system and social services,¹³ and to assess performance in both hierarchical risk and parallel risk models. To track population health effectively, scientifically valid and clinically relevant performance metrics should measure the quantity and quality of medical services, social services, patient outcomes, and costs across both the health care and social sectors.

Quality measures are already used by health care payers for quality improvement, public reporting, and incentive programs.¹⁴ Measures are used to a much lesser extent in the social services sector. However, as noted in the discussion of the hierarchical and parallel risk models, there is the potential to link measures across these sectors. In fact, linking measures across these sectors is essential for driving collaboration in both the hierarchical and parallel risk models.

In a hierarchical risk model, the top-level organization – typically a government agency – will have to determine what measures to use to assess CBO performance. A parallel risk model will require multiple organizations (as defined in the inventory of risk relationships) to achieve consensus on appropriate measures. For either process, it is useful to consider a set of criteria for measure selection. In this section, we provide some important criteria, and introduce an example linking measures for key conditions, including diabetes, cardiovascular disease, and behavioral health.

Criteria for Selecting Measures in Cross-Sector Collaborations

Organizations seeking to implement a hierarchical or parallel risk model should consider the following criteria during the measure selection process.

Measures should be:

- **Objective** and based on scientific evidence;
- **Valid and reliable**, as demonstrated through measure testing and/or endorsement;
- **Feasible** to collect and report;
- **Focused** on the interplay between health care and social needs, rather than strictly on the clinical process, or only on patient outcome measures traditionally used by health care incentive programs;
- **Relevant** to the target population and communities served by the partnership;
- **Actionable** by the organizations involved in the partnership, including both short- and long-term outcomes; and
- **Linked** so that measures used in the social services sector tie to health care structure and process measures and patient- and population-level outcomes.

It is important to note that it is impossible to measure everything. Organizations will need to balance the desire to be comprehensive against the burden it may place on patients, communities, and health care providers. Program administrators must also be vigilant to ensure that the processes or incentives do not unintentionally result in practices that could harm patient or population health.

Sample Measures

In the table below, we present a set of sample measures for three conditions that are in line with the criteria outlined above and are often the focus of population health improvement and cost containment efforts.

Table 1: Sample Measures

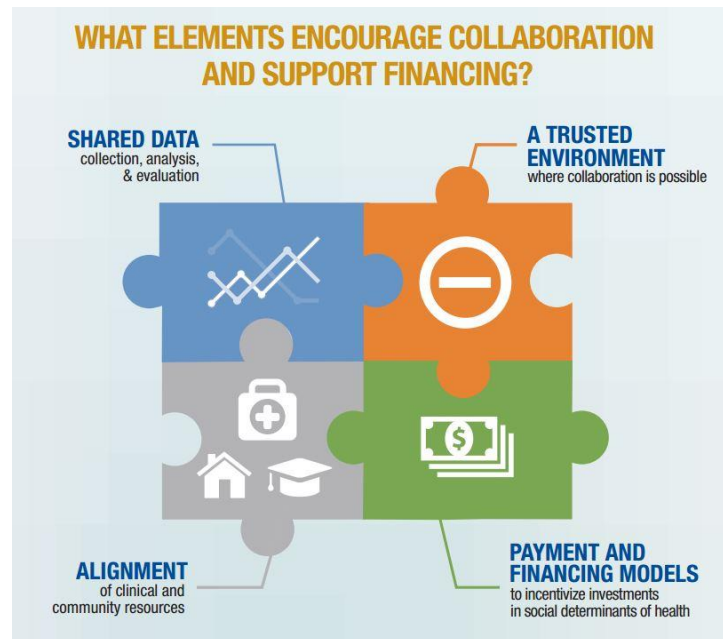
	Population-Level Measures	Health Care Provider Measures	CBO Measures
Diabetes	<ul style="list-style-type: none"> • Diabetes prevalence rate 	<ul style="list-style-type: none"> • HbA1c control • Acute admission rate for patients with diabetes • Readmissions rate 	<ul style="list-style-type: none"> • HbA1c control • Nutrition services delivered
Cardiovascular Disease	<ul style="list-style-type: none"> • Chronic heart failure prevalence • Chronic heart failure mortality rate 	<ul style="list-style-type: none"> • Use of aspirin • Statin therapy • Blood pressure control • Admission rates for patients with heart failure 	<ul style="list-style-type: none"> • Smoking cessation • Blood pressure control
Behavioral Health	<ul style="list-style-type: none"> • Substance use disorder prevalence • Suicide rate 	<ul style="list-style-type: none"> • Screening for depression • Screening for substance use disorder • Mental health and substance use related ED visits 	<ul style="list-style-type: none"> • Depression remission • Mental health and substance use related ED visits

Conclusion

While social determinants of health contribute significantly to health outcomes, spending on social services in the U.S. remains low compared to other industrialized nations, and the level of alignment between the health care and social services sectors remains low. The growing focus on value-based care in the U.S. has created a renewed interest in social determinants and their relationship to population health outcomes. Building risk relationships between medical care and social services would foster stronger coordination and better population health support.

This paper proposes a framework for defining risk relationships, and to identify opportunities to use risk alignment to increase integration across health care and social services. In a hierarchical risk model, a health care entity at risk, such as an ACO or managed care plan, contracts with a CBO to provide services and provides incentives, such as shared savings or bonuses, based on performance. In a parallel risk model, multiple stakeholders must come together to agree on a set of performance metrics and risk incentives for population health outcomes.

Implementing alignment models presents a steep learning curve for purchasers, providers, and CBOs. Establishing common goals for population health improvement can lay the foundation for collaboration. The use of governance models and collaborative structures and data sharing are foundational elements for ongoing collaboration. Pilot programs can be a useful way to test collaborations and address barriers before entering into financial relationships.



For both the hierarchical and parallel risk models, it is critical to align measures used to assess CBO performance with established measures that assess the performance of health care providers. When choosing measures, sponsoring entities should ensure that measures are objective and valid, focused on the interplay between health care and social needs, relevant to the target population and community, actionable by the partners, and linked so that structure and process measures tie to individual- and population-level outcomes. We presented a set of sample measures that illustrate these criteria. As outlined in the aforementioned example, partnering entities can identify comparable performance measures to align their efforts to address common disease conditions and improve the overall health of a community.

References

- ¹ US Health System Ranks Last Among Eleven Countries on Measures of Access, Equity, Quality, Efficiency, and Healthy Lives. The Commonwealth Fund. <http://www.commonwealthfund.org/publications/press-releases/2014/jun/us-health-system-ranks-last>. Published June 16, 2014.
- ² Green M. The shift from volume-to-value: An opportunity to drive clinical workforce improvement. *Becker's Hospital Review*. <http://www.beckershospitalreview.com/human-capital-and-risk/the-shift-from-volume-to-value-an-opportunity-to-drive-clinical-workforce-improvement.html>. Published June 24, 2016.
- ³ Health Care Payment Learning & Action Network. *Measuring Progress: Adoption of Alternative Payment Models in Commercial, Medicaid, Medicare Advantage, and Fee-for-Service Medicare Programs*. October 30, 2017.
- ⁴ Health Policy Brief: The Relative Contribution of Multiple Determinants to Health Outcomes, *Health Affairs*, August 21, 2014. Accessed October 2016 at http://healthaffairs.org/healthpolicybriefs/brief_pdfs/healthpolicybrief_123.pdf.
- ⁵ County Health Rankings, Population Health Institute, University of Wisconsin-Madison. <http://www.countyhealthrankings.org/>.
- ⁶ Hargunani D. Shared Measurement and Joint Accountability Across Health Care and Non-Health Care Sectors: State Opportunities to Address Population Health Goals. Robert Wood Johnson Foundation. <https://www.statenetwork.org/wp-content/uploads/2017/01/SHVS-Shared-Measurement-and-Joint-Accountability-Across-Health-Care-and-Non-Health-Care-Sectors-January-2017.pdf>. Published January, 2017.
- ⁷ Squires D. Anderson C. US Health Care from a Global Perspective: Spending, Use of Services, Prices, and Health in 13 Countries. The Commonwealth Fund. Published October 8, 2015. Available from: <http://www.commonwealthfund.org/publications/issue-briefs/2015/oct/us-health-care-from-a-global-perspective>.
- ⁸ Payment Reform for Population Health. AcademyHealth. <http://www.academyhealth.org/about/programs/payment-reform-population-health>.
- ⁹ Shapiro I. Reich D. Cho C. Kogan R. Trump Budget Would Cut Block Grants Dramatically, Underscoring Danger of Block-Granting Social Programs. Center on Budget and Policy Priorities. Published March 27, 2017. Available from: <https://www.cbpp.org/research/federal-budget/trump-budget-would-cut-block-grants-dramatically-underscoring-danger-of>.
- ¹⁰ "What is the National Quality Strategy?", Robert Wood Johnson Foundation, Available from: <https://www.rwjf.org/en/library/research/2012/01/what-is-the-national-quality-strategy.html>.
- ¹¹ Collaboration to Support Medicaid Roadmap. AcademyHealth. Available from: <http://www.academyhealth.org/node/8176>.

¹² Nolen L. Improving Population Health Outcomes By Investing In Community Prevention. Published on November 30, 2017. Available from:
<https://www.healthaffairs.org/action/showDoPubSecure?doi=10.1377%2Fhblog20171130.64591&format=full>.

¹³ National Research Council (US) Panel to Advance a Research Program on the Design of National Health Accounts. Accounting for Health and Health Care: Approaches to Measuring the Sources and Costs of Their Improvement. Washington (DC): National Academies Press (US); 2010. 5, Defining and Measuring Population Health. Available from:
<https://www.ncbi.nlm.nih.gov/books/NBK53336/>.

¹⁴ Centers for Medicare & Medicaid Services (CMS). Quality Measures. Available from:
<https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/index.html?redirect=/QualityMeasures/>.