



## Social Health Information Exchange: Connecting Health Care with Services that Address the Social Determinants of Health

### 1. Introduction

The health of Coloradans is primarily influenced by non-medical factors such as food, housing, social connectedness and safety, often referred to as social determinants of health (SDoH). To support whole-person care and make it easier for Coloradans to access the comprehensive services they need, it is necessary to more seamlessly connect health care systems and systems of SDoH services and supports.

Health care costs continue to rise in the U.S. even as our understanding grows that most activities that support health happen outside of the clinic and hospital walls. A number of researchers have estimated the relative impact of health care, health behaviors, social factors, and environmental factors on health outcomes. While these researchers have used different methodologies to estimate the relative weight of these factors, health care (clinical care) is estimated to account for anywhere from 10 to 27 percent of health outcomes, while health behaviors and socio-economic factors are estimated to account for 60 to 85 percent of health outcomes.<sup>1</sup> Non-medical services and supports often affect health behaviors and socio-economic factors, both of which have an impact on health.<sup>2</sup> Addressing social determinants of health is critical for improving the health of people of all income levels and insurance types. As evidence of this, the National Committee for Quality Assurance has incorporated the social determinants of health into the population assessment and complex case management standards for Population Health Accreditation.

This paper explains why now is a critical time to plan for a social-health information exchange, a referral and tracking system that connects health services and SDoH services. It also offers recommendations for how Colorado can build a system that connects health care, government programs, and community-based service providers, so they can work together more consistently and efficiently to make Colorado the healthiest state in the nation.

### 2. Why Connect Health Care with SDoH Services?

Many organizations that are concerned about addressing the social determinants of health have expressed a need for a connected system of referral and follow through. These organizations, including community-based service providers, health care systems, state and local government, health plans and foundations, want to communicate, collaborate, and coordinate with one another and with their clients/patients. This paper was written to illuminate opportunities to address this need.

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<sup>1</sup> Booske BC, Athens JK, Kindig DA, Park H, Remington PL. Different perspectives for assigning weights to determinants of health. Madison, WI: University of Wisconsin Population Health Institute; 2010.

<sup>2</sup> Bradley EH, Canavan M, Rogan E, Talbert-Slagle K, Ndumele C, Taylor L, Curry LA. Variation In health outcomes: The role of spending on social services, public health, and health care, 2000–09. *Health Affairs* Vol. 35(5); 2016.



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In addition, the Colorado eHealth Commission's *Colorado Health IT Roadmap* suggests that such a system should be a priority in order to have effective care coordination and better health and wellness outcomes for Coloradans. This paper presents concrete and achievable ways to focus on the following priorities in *Colorado's Health IT Roadmap*:

- **01. Support Care Coordination in Communities Statewide.** Develop, support, and enhance technical approaches that can be used to easily share care coordination information - within and across - communities. The initiative recognizes that approaches to care coordination may be unique to individual communities.
- **02. Promote and Enable Consumer Engagement, Empowerment, and Health Literacy.** Develop and implement tools to educate, engage, and empower consumers in their health and well-being.
- **04. Integrate Behavioral, Physical, Claims, Social, and Other Health Data.** Develop and implement holistic approaches to harmonize, prioritize, and enable the integration and aggregation of relevant health information on an individual in a meaningful way.
- **14. Uniquely Identify a Person Across Systems.** Develop and implement a comprehensive approach - that includes both health and social services information - that will be used across Colorado to uniquely identify a person across multiple systems and points of care.

The following are additional compelling reasons to address these priorities now:

- **Health care organizations are increasingly responsible for health outcomes.** Payers are requiring health care organizations to practice whole-person health care and demonstrate value and positive health outcomes. However, they are often unable to easily assess a person's non-clinical needs or get the person connected with non-medical services and supports. Evidence continues to indicate that the cumulative effect of food insecurity, housing insecurity, and poor education contribute to multiple chronic diseases and "patient non-compliance." For example, a clinician can prescribe insulin, but who will ensure that the patient has a way to pay for it or a refrigerator in which to store it or the transportation needed to pick it up? When providers can accurately identify a person's needs and easily connect that person to services, they have essential tools for successful treatment and care.
- **Colorado is investing in multigenerational programs and models of whole-person care.** Programs and plans like the Colorado Opportunity Framework,



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the Two-Generation Approach (2Gen), Medicaid’s Accountable Care Collaborative and others call for a coordinated, whole-person approach that connects health care with SDoH services and supports. We do not yet have the “sociotechnical infrastructure” -- the human workflow behaviors and information technology - in place for this level of coordination.

- **In the absence of a coordinated infrastructure, organizations are building parallel referral systems without interoperability, interconnectivity, or data governance standards.** Health care organizations, county agencies, Regional Accountable Entities, and others have begun to create their own technology solutions for coordinating care and connecting medical and SDoH services. These service providers often serve the same individuals (or have the potential to do so), but are not able to easily connect their systems or support interoperability. This reduces client access to all the services and supports that are available across sectors, and geographic areas. This is the situation health care is already facing with its separate electronic health record systems that cannot easily “talk” to each other or exchange information. Now is the time to prevent a similar situation by putting common, shared standards and a coordinated infrastructure in place.
- **A coordinated infrastructure that links to resources can support independence and resilience, because it gives individuals and families access to information.** A coordinated system makes it easier for individuals to access the services they and/or their families need. People prefer to help themselves when they can. When information is readily available and gaps are identified, individuals are empowered to use their resourcefulness to find the services that are right for them.

### 3. The Current Fragmented System of Referrals Between Health Care and SDoH Services

Many stakeholders are already feeling the need to connect health and SDoH services, and are in the process of creating their own solutions. For example, Children’s Hospital Colorado has been building its own resource database of community-based services to facilitate referrals for such services when families need them. Boulder County has created Boulder County Connect to help clients track and manage their benefits and to ease client referrals from one service provider to another. Regional Accountable Entities that administer the Health First Colorado (Medicaid) Accountable Care Collaborative program are creating or obtaining resource databases and care coordination platforms to address this gap.

On the surface, it may not seem problematic for an organization or community to have a stand-alone resource and referral system because people are usually seeking both



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medical care and other services in the same region. However, an individual's needs do not usually fit neatly into a single contained local system or geographic area, nor do the resources they seek. In addition, it is inefficient and more costly for individual entities to maintain the most current information for the myriad of SDoH service providers.

For example, Children's Hospital Colorado serves patients from every county in the state. Its referral service will overlap, for example, with each of the Regional Accountable Entities, but has no easy mechanism to coordinate these referrals with the RAEs. In addition, some resources are available statewide and may not appear on a list of resources customized by the Regional Accountable Entity for the local area. Alternatively, these resources might be included in all of the overlapping resource lists, placing a burden on the service organizations to interface with multiple systems and update their information on multiple resource lists. To minimize this burden and to ensure uniform and consistent information about available services, statewide interconnectedness of these regional systems is needed.

### **4. Recommendations for Creating a Connected Social-Health Information Exchange**

A social-health information exchange would give Colorado's health systems and SDoH service providers a coordinated way to communicate about services needed, referred to and obtained. Our vision is to connect these systems for person-centered care, and to ensure that all systems work together for more efficiency and a better return on investment. However, this will take time to build and is best done in stages. The social-health information exchange consists of a number of pieces that can be implemented gradually. We envision two phases of work. In Phase 1, organizations will screen consistently for social determinants of health needs, and Colorado will create a resource repository with comprehensive and reliable information about community service resources.



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Figure 1. Phase 1 of the Social-Health Information Exchange: Screening and Resource Directory

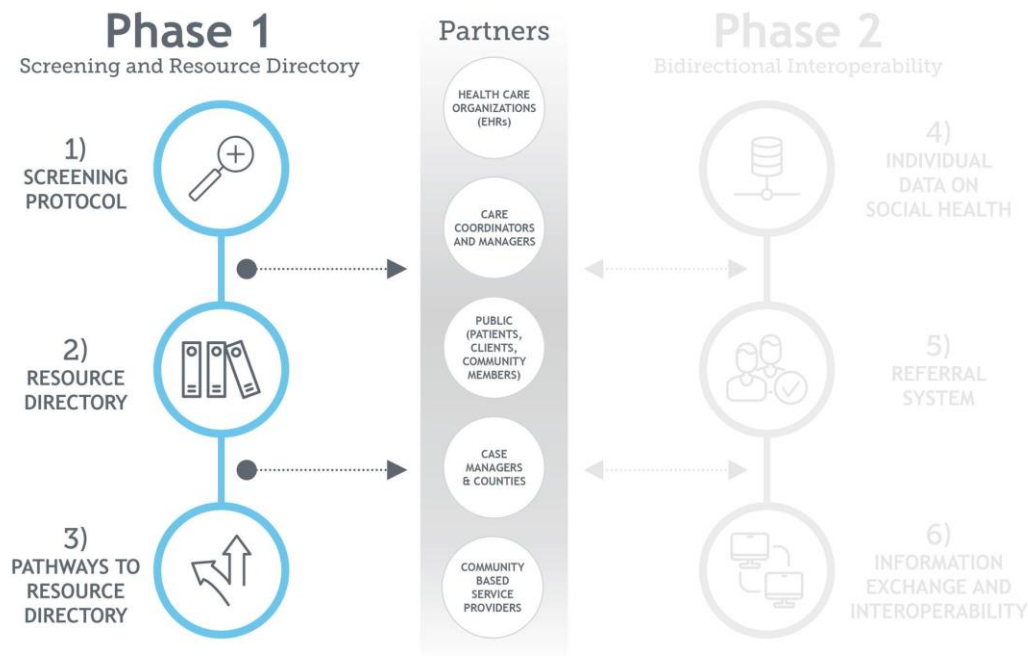


Figure 1 shows three foundational elements of a social-health information exchange that are a logical place to begin. The arrows in Figure 1 go only in one direction because organizations have access to the screening protocols and the resource directory, but are not able to contribute individual client screening and referral data back into the system.

1. **Ensure that all health care and community service providers are screening for social determinants of health from a menu of validated screening questions and/or tools.**  
Ensure that all health care and community service providers are screening patients/clients for SDoH needs such as food, housing, utilities and transportation, with standardized tools.
2. **Create a comprehensive statewide resource directory for community-based SDoH services.**  
Improve and expand existing databases of statewide and community-based resources in order to transition to a new comprehensive, centralized resource directory with updated, reliable information. The goal is to reduce duplication and make the resource directory accurate and complete, so users can trust the



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information in the directory. It will also reduce the burden on community service organizations who will have to submit their information to only one place rather than to multiple directories. This will not only increase accuracy of resource information, but will also increase efficiencies, and will ultimately result in costs savings as duplication is reduced.

3. **Ensure that providers and the public have pathways to the resource directory and the information in it.**

The information in the resource directory should be made available to both service providers and the public. The information in the directory must be queryable in different ways to meet the needs of different providers, systems, and individuals. The public should be able to use the repository through a web-based or mobile format, and possibly by contacting a call center as well. The resource database vendor should provide the required technological accessibility required to allow multiple systems to interface with it. The vendor should also work with health and community-based service providers to learn how they would like to communicate resource information to their patients or clients -- for example, text messages, email, or printouts of results from the query.

As Figure 2 shows, Phase 2 of this work includes building out technology and other infrastructure to allow organizations to share data and track SDoH screening and referral for individuals across systems. The arrows are bidirectional because organizations both pull down data and information and contribute individual patient/client data to the system to share with other organizations. This phase includes the following elements:

4. **Create the capacity to manage individual patient/client data to track social health needs and service utilization to meet those needs.**

Create a system with appropriate security measures and role-based access to store and manage data related to an individual's SDoH needs assessment and any referrals and services delivered to meet those needs. As the Health IT Roadmap suggests, this system can be used to uniquely identify a person across multiple systems and points of service.

5. **Create a community-based service referral system with a feedback loop.**

Give health care and community service providers the ability to make a referral for community-based services and track the result. This system will allow health care, government, and community service providers to make referrals to community-based services and close the loop by finding out whether the



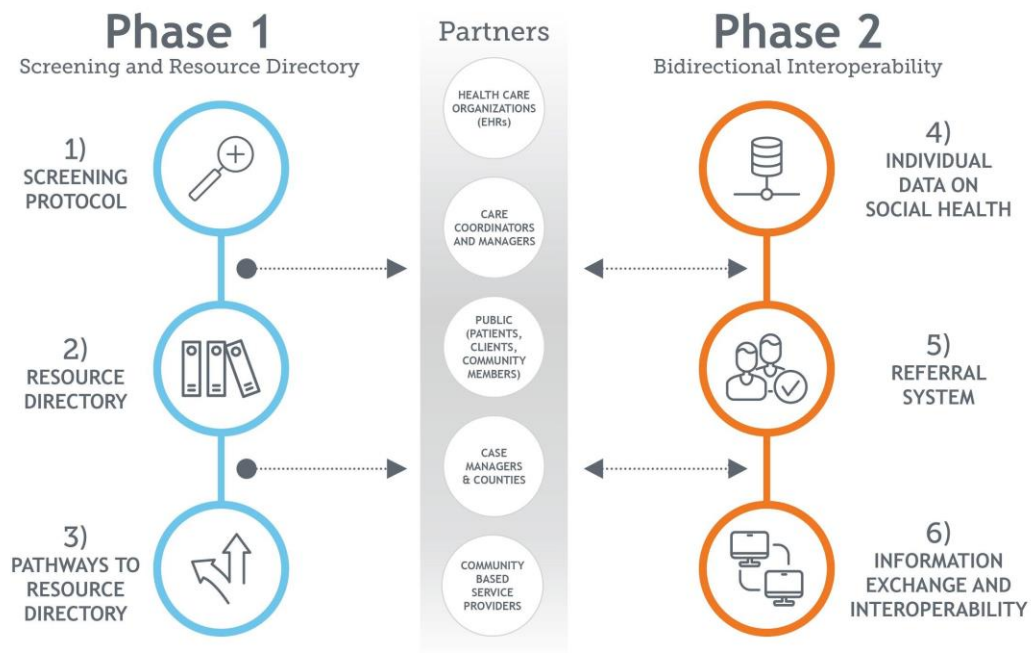


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service was received. It will also allow community-based service providers to receive referrals and proactively contact referred individuals.

6. **Create the capacity for information exchange and interoperability among health care and community-based systems that serve the individual.**  
Create a full social-health information exchange by allowing existing systems such as electronic health records, care coordination platforms, and case management systems to connect and share data. This level of connectivity should give providers information about who else is serving the individual so that shared care planning is possible. The system should be capable of secure messaging and communication among providers. It must be able to manage individuals' consent to share information, and grant access based on consent. This level of information exchange, necessitates a master patient/client index that allows an individual to be tracked across settings and systems.

Figure 2. Phases 2 of the Social-Health Information Exchange: Tracking Individuals in the System





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### 5. Benefits of Creating a Connected Social-Health Information Exchange

Without a connected social-health information exchange, Colorado will continue to miss opportunities to improve the health of Coloradans by connecting health care services and services that meet their social health needs. The benefits of a connected system include the following:

- **Better individual care coordination.** Coordinated care helps us to meet the goal of providing better care, better health, and better value. With a connected system, the social needs of individuals and families will be identified and addressed sooner, and whole-person care coordination will become a reachable goal. The system will save time and effort for care coordinators so they can focus on helping those with complex needs. In addition, better access to information will empower patients and providers to find and access needed community-based services. A connected system positions Colorado to fully participate in state and federal value-based payment programs, as well as other programs that require whole-person care. It will build and strengthen the relationships among providers of all types of services, thereby creating a true “health neighborhood” in each region of the state.
- **Population-level planning and evaluation.** The data generated by a social-health information exchange would give communities and decision-makers insight into the social and community services available in a region and any gaps in services. For example, the data can be used to look at all of the food resources in a region to see where food pantries are lacking, infrequent, or not accessible by public transportation. This work will also allow Colorado to gain more insight into how services and programs are used, which creates the capacity to measure performance and assess which services make the most difference for health outcomes. This may be useful for decision-making about how to allocate resources and for measuring the performance of programs and interventions. It may also give community-based service providers information about how to improve their services.
- **Reduced burden on community-based service organizations.** If multiple resource directories are built, community-based organizations will be asked to submit and update information about their organization’s services multiple times. A connected system will reduce this burden. In addition, community-based services are often small and under-resourced, and are unable to build sophisticated systems to track individual service referral and utilization. A connected system can give these organizations access to information and infrastructure they otherwise would not have. However, some organizations





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may already have built a system that works for them, at considerable cost. If this is the case, it is important to ensure that the system we are proposing is either interoperable with their existing systems, or is so much more useful than the existing systems that is cost-effective to switch to the new one.

### 6. How to Get Involved

Creating a coordinated, statewide social-health information exchange will require collaboration and investment. In *Colorado's HIT Roadmap*, the eHealth Commission emphasizes the role of partners, including health foundations and nonprofits, to “fund innovation, conduct analytic research, and help to address key community needs.”

The work described in this paper can bring some of the Roadmap's priorities to life. These six projects are well suited for start-up funding because much of the expense requires an upfront investment to put each discrete component in place. A well-crafted social-health information exchange would enable integration into existing workflows and systems, relieving rather than adding burden to providers, community service providers, and others who will use the system.

Some of the projects to build this infrastructure are technical while others are not. There are opportunities for any funder or partner who is committed to supporting health in all settings and connecting health care providers with other services that support health. Funding is one way to help, but it is also necessary to have partners who will work together to think through challenges and then develop, test, and implement the solutions. We will also need partners who will help us spread the word about why this matters now and how it helps all of us who care about the health and wellbeing of Coloradans and their communities.



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### Definitions of Terms

A good collaboration begins with a shared vocabulary. Below are the definitions for terms used in this paper:

- **SDoH services or resources:** Services that address needs such as food insecurity, housing, childcare, transportation, and education, and are delivered by non-health care organizations in communities.
- **Health care or medical services:** Services delivered by medical providers such as clinics, medical practices, hospitals, and ancillary therapists.
- **Interoperable:** The ability of different information systems to work together and share information.
- **Referral system:** A set process that connects patients/clients with needed health care and SDoH services; tracks whether the services were accessed; and reports on the outcome of the services.
- **Social determinants of health:** The conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels. The social determinants of health are mostly responsible for health inequities - the unfair and avoidable differences in health status seen within and between communities. (based on the World Health Organization's definition)
- **Social-health information exchange:** A system that uses technology and other tools to allow data and information sharing among health care and SDoH service providers about services needed and accessed by individuals. This includes individual and aggregated data.
- **Government programs:** Includes programs and services such as food assistance (SNAP), public insurance (CHP+ or Medicaid) and cash assistance.