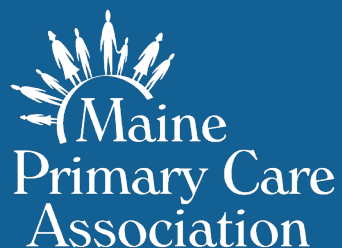




Social Health Data Action Plan for Maine's Federally Qualified Health Centers

August 2021



Acknowledgments

When HealthInfoNet and the Maine Primary Care Association (MPCA) entered into a partnership to better understand and technically support social health data collection, exchange, and operationalization strategies among Maine's federally qualified health centers (FQHCs), the global COVID-19 pandemic was not yet known. It was October 2019, and the project's participants were excited by the opportunity to engage with each other in a collaborative, in-person forum to discuss best practices, lessons learned, and areas for improvement. But by the time the project was ready to formally begin, Maine Governor Janet Mills set in motion a statewide lockdown.

Though initial milestones were adjusted to meet new expectations of virtual settings and operational priorities, the project moved forward with positivity, enthusiasm, and a certain sense of urgency. Because participants knew that by identifying such strategies it would enable them to more effectively respond to their patients' health-related risks, conditions, and outcomes in every day circumstances – though especially so during the stress of a pandemic.

HealthInfoNet and the MPCA would like to extend their special gratitude to the project's FQHC participants – Eastport Health Care, HealthReach Community Health Centers, Katahdin Valley Health Center, Nason Health Care, Penobscot Community Health Center, and Sacopee Valley Health Center. Without their dedicated and steadfast involvement in this project and support of its vision, this partnership would not have been successful. More importantly, thank you to the centers' essential workers for standing on the front lines in addressing critical health needs every day and in the fight against the COVID-19 virus.

Table of Contents

Acknowledgments	2
Introduction.....	4
Background.....	5
<i>Defining Social Health Information</i>	<i>5</i>
<i>Capturing Social Risk Factor Information</i>	<i>7</i>
<i>Sharing Social Risk Factor Information</i>	<i>14</i>
Project Overview	16
<i>Prior Collaboration Among HealthInfoNet, the MPCA, & Maine’s FQHCs.....</i>	<i>16</i>
<i>HealthInfoNet & MPCA’s Convening Effort with Maine’s FQHCs</i>	<i>17</i>
Findings.....	19
<i>FQHCs’ Leadership & Innovation Role in Redefining the Care Delivery Model</i>	<i>19</i>
<i>Opportunities to Overcome Varied Data Collection Strategies by Streamlining & Prioritizing Efforts.....</i>	<i>21</i>
<i>Counteracting Limited Internal Capacity with External Guidance to Advance Data Strategies</i>	<i>26</i>
Recommendations.....	27
<i>Data Collection</i>	<i>27</i>
<i>Data Exchange.....</i>	<i>29</i>
<i>Data Operationalization</i>	<i>31</i>
Conclusion.....	36
References.....	37

Introduction

Over the last several years, identifying strategies for the successful collection, exchange, and operationalization of ‘social determinants of health’ data sets has become a top priority for stakeholders in pursuit of the Triple Aim¹. Nowadays, nearly everyone working to improve the way care is delivered to individuals who overlap diverse systems can cite the World Health Organization’s definition of the term². These stakeholders recognize the importance of better understanding this body of work – and specifically its data-driven technological underpinnings – as a way of beginning to discover how to improve the health, wellness, and wellbeing of individuals and their communities.

But cracking this social-health-information nut is challenging. First and foremost, it’s challenging because the term ‘social determinants of health’ is a loaded, often misused, concept imbued with both theoretical and practical interpretation³. For it to be applied effectively, it must simultaneously consider the macro (society-level), mezzo (community-level), and micro (individual-level) processes and their respective idiosyncrasies that are interrelated and in constant flux. Which is why the misnomer is best used when not used at all in sweeping applications, but instead as three separate classifications: ‘structural determinants’ (macro), ‘social determinants’ (mezzo), and ‘social risk factors’ (micro)⁴.

Secondly, it’s challenging because many stakeholders in the field are offering comparable, though differing, technological and operational solutions to overcome the inherent complexity of managing social health information⁵. There currently exist a variety of social risk screening tools and other such workflows that focus on certain risk domains but not others, measure certain risk factors but not others, integrate with certain electronic health record systems but not others, and, perhaps most importantly, are promoted and endorsed by certain federal, state, and/or community reporting programs but not others. As a result, the burden of operationalizing available outputs from these tools and workflows is great for not only the medical stakeholders required to implement them, but also the staff-, time-, and resource-constrained cross-sector partners hoping to benefit from their outputs.

Given these and other related challenges, the Maine Primary Care Association (MPCA) partnered with HealthInfoNet and a subset of Maine’s federally qualified health centers (FQHCs) to participate in a 6-month convening process, possible through funding awarded by the Health Resources and Services Administration (HRSA), to inform the creation of a unified set of strategies for successfully collecting, exchanging, and operationalizing social health information. Given HealthInfoNet’s role as designated operator of the state of Maine’s Health Information Exchange (HIE), as well as the FQHCs’ unique and strategic position in serving populations commonly with the most activity across systems of care, the project offered a special opportunity to obtain invaluable insights to help align efforts across Maine’s FQHCs and to provide guidance to other involved and/or impacted stakeholders more broadly.

The recommendations provided in this report are categorized into three primary domains: data collection, data exchange, and data operationalization. Together, they represent a concerted effort offered by HealthInfoNet and the MPCA to support and enhance Maine’s FQHC communities in their social health information strategies – despite and amidst pervasive challenges in the field. As Maine’s FQHCs continue to serve in a role of innovation and leadership in this important work, the report may also assist other systems of care in Maine and beyond in their own critical efforts.

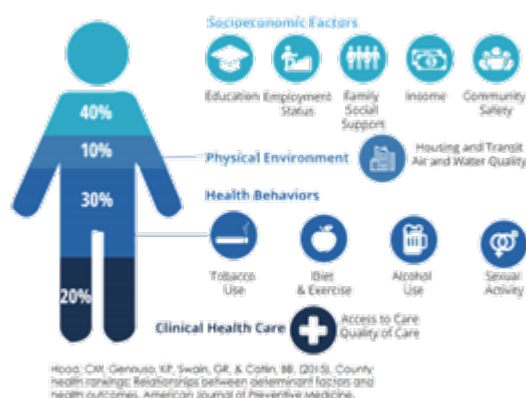
Background

Defining Social Health Information

A growing movement in health information technology is in the creation of sophisticated ecosystems involving multidisciplinary network partners that expand the way care is delivered to individuals who overlap diverse systems of care. This effort has advanced as a result of increased recognition that the status of an individual's health is more than just the sum of their clinical encounters; that medical care alone cannot always account for what makes us sick. Instead, a broad, community-wide focus on the underlying social conditions in which individuals live must also be considered.

One common way of describing this effect is that there are factors that exist 'upstream' that influence characteristics that exhibit further 'downstream,' whereby social, economic, and political circumstances represent upstream factors and health risks, conditions, and outcomes represent downstream factors⁶. To illustrate this point, the [Robert Wood Johnson Foundation](#) estimates that only 20% of health outcomes can be attributed to medical care; upstream factors account for the other 80%, including social and economic factors (40%), physical environment (10%), and health behaviors (30%)⁷ (Figure 1). The ongoing COVID-19 pandemic provides a timely example of this reality. Factors such as income inequality, community perceptions and cultural beliefs, and access to healthcare services have been identified as some of the greatest influences on the virus's incidence and health outcomes in vulnerable populations⁸.

Figure 1. Factors Impacting Health Outcomes



This paradigm shift in redefining the model of how care is delivered aims to bridge the clinical and community divide by placing greater emphasis on identifying societal issues and collective impacts contributing to health-related risks, conditions, and outcomes.

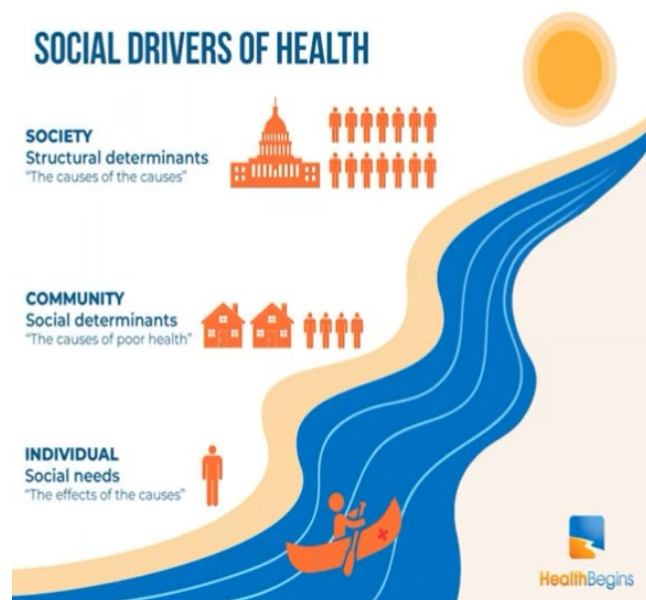
The term 'social determinants of health' is pervasive in healthcare to label this very notion. Yet equally widespread is its misuse, with stakeholders interchangeably using it in lieu of other similar, yet distinct, established health concepts (e.g., 'social needs,' 'social problems,' and sometimes even 'population health' and 'behavioral health')³, which results in difficulty in accurately and reliably communicating the purpose and importance of improving health through reductions in non-medical health disparities. To add clarity to the conversation, Finn Diderichsen, MD, PhD, Professor at the University of Copenhagen, offers a more detailed theoretical model known as "the mechanisms of health inequality"⁹. Diderichsen's model has been used widely in the review, theorization, and application of this study, most notably by the [World Health Organization](#) and its Commission on Social Determinants of Health (CSDH)¹⁰.

Diderichsen's model begins with the concept of 'social contexts,' which he defines as the structures and social relations rooted in society that conceive social stratification. It includes the social, economic, and political mechanisms, such as the labor market, educational system, political institution, welfare state, and other cultural and societal values that define individuals' socioeconomic positions. An individual's position in society is likely stratified most by structural indicators such as their income, education, occupation, sex/gender, and race/ethnicity—the macro-level mechanisms at play in the societies in which individuals live. By examining an individual's social stratification, which can be assessed by combining their social contexts, structural indicators, and resulting socioeconomic positions, known collectively as what

the CSDH calls ‘structural determinants,’¹⁰ Diderichsen posits that it can provide high-level insight into their health status. These factors are commonly referred to as “the causes of the causes”⁴ impacting an individual’s health status.

For example, where an individual lives and how much education is afforded to them impacts the types of occupation available to them, which impacts the amount of income they are eligible/qualified to receive, which impacts the access and opportunity they have to various healthcare services. But whether that individual has great or little access and opportunity is of no difference to structural determinants; they simply represent the factors either promoting or undermining the health of certain populations.

Figure 2. Social Drivers of Health



Instead, to evaluate what Diderichsen frames as “differential consequences of ill health”¹⁰ based on individuals’ social stratification, it requires beginning to examine the mezzo-level social, economic, and political processes underlying structural determinants that can specifically result in negative outcomes at a community level. When the World Health Organization defines ‘social determinants of health’ as “the conditions in which people are born, grow, work, live, and age,”² it is often more precisely this level of interaction being referenced. Structural determinants are neither positive nor negative, good nor bad; they affect everyone, just in varying and differing ways. What will be referred to as ‘social determinants’ are what are commonly referred to as “the causes of poor health,”⁴ the differential adverse exposure and vulnerability to health-related risks, conditions, and outcomes at a community level.

Referring to an earlier example, where an individual lives impacts the types of occupation available to them based on the conditions of the labor market (a structural determinant). In some cases, communities can experience what is referred to as an ‘employment desert,’ akin to the more widely adopted concept of a ‘food desert.’ Consider the city of Detroit as an example, where shifting community priorities, caused by changing social, economic, and political climates over the years, resulted in a widespread lack of reliable job opportunities within city limits to meet residents’ demands¹¹ – a social determinant most commonly measured by the unemployment rate (Detroit’s hit 25% in 2009). With social determinants, like employment deserts, communities generally face greater adverse impacts to their access to healthcare services. In an employment desert, a community’s residents may experience a lack of income flow and health insurance eligibility typically obtained through employment, thereby limiting their ability or comfort in utilizing health-related supports and services.

But then again, not all community-level social determinants adversely impact each community member. In the case of an employment desert, individuals who do not have access to personal transportation or who are unable to rely solely on public transportation to find employment outside of city limits are more likely to be negatively affected in terms of their health, wellness, and wellbeing in comparison to those individuals who are able to use personal or public transportation to secure employment elsewhere. In other words, social determinants are not the same as the micro-level attributes or exposures that increase specific individuals’ likelihood of poor health. These individual-level adverse social determinants can be

labeled as ‘social risk factors’³; they are the “effects of the causes”⁴ that target distinct individuals or defined populations within communities.

To complete the example used thus far, the social risk factor for individuals who are living in a community experiencing an employment desert and who do not actively hold a job is known as unemployment. Of note, a point of confusion in using the term ‘social risk factor’ is that it is commonly interchanged with the notion of ‘social need’ (or ‘health-related social need’)³. However, whereas individuals may have multiple, simultaneously occurring social risk factors, such as unemployment, homelessness, and food insecurity, they may only have a single social need at any given time, such as the urgency to find a nutritious and recurring source of food for their household.

By disentangling the use of ‘social determinants of health’ through the introduction of separate concepts for ‘structural determinants’ (macro), ‘social determinants’ (mezzo), and ‘social risk factors’ (micro) ([Figure 2](#)), Diderichsen, with help from others in the study, makes a critical disambiguation of the term. For the purposes of this report, each term will be used in its appropriate setting based on the definitions presented in this section, unless cited materials define the terms differently in their established works. Where a more general use of the concept is needed, ‘social health data’ or ‘social health information’ will be applied. For a summary of key terms defined in this section, see [Table 1](#).

Table 1. Definition of Key Terms

Term	Definition	Example
Social Health Data/ Social Health Information	The generalized concept that universally refers to the macro-, mezzo-, and micro-level social factors impacting health status	N/A
Structural Determinants	The macro-level “causes of the causes” impacting a society’s health status	Labor Market
Social Determinants	The mezzo-level “causes of poor health” impacting a community’s adverse health status	Employment Desert
Social Risk Factors	The micro-level “effects of the causes” impacting an individual’s adverse health status	Unemployment

Capturing Social Risk Factor Information

Defining and identifying individual-level social risk factors can help diverse systems of care more effectively target the necessary interventions to address them at the micro, mezzo, and macro levels. Within the medical field, systematic assessment of social risk factor information has increasingly been adopted as a way of evolving the traditional model of how care is delivered by providing additional, non-medical context for the health of individuals and populations¹². Widely known as ‘social risk screening tools,’ a growing number of approaches to capturing such information have been developed and deployed in the field. In short, the idea is to ask carefully curated questions that surface upstream factors influencing characteristics that exhibit downstream factors. Their introduction into conventional patient care workflows marks an essential first step in connecting at-risk individuals with the necessary community, social, public, and/or medical supports and services.

A few well-known social risk screening tools underpinning strategies to collecting social risk factor information include the following instruments.

NACHC PRAPARE:¹³ The National Association of Community Health Centers (NACHC) developed one of the first comprehensive social risk screening tools known as the Protocol for Responding to and Assessing Patients’ Assets, Risks, and Experiences (PRAPARE). The tool consists of 16 core measures and an additional four optional measures, which can be used based on community-specific priorities ([Table 2](#)).

The measure set was devised in alignment with national initiatives prioritizing the collection and use of related data (e.g., the Healthy People 2020 initiative and the Accountable Health Communities program), as well as with measures required by Meaningful Use and HRSA’s Uniform Data System (UDS) reporting efforts.

The PRAPARE assessment is free to the public, translated into more than 25 languages for ease of use with diverse patient populations, and available as templates within providers’ electronic health record (EHR) systems (e.g., athenaPractice, eClinicalWorks, Cerner, Epic, NextGen, etc.). PRAPARE’s EHR templates enable providers to easily translate screened responses into standard diagnosis upon clinical evaluation. Additionally, NACHC offers a PRAPARE Action Toolkit⁶ to providers, which shares a collection of resources outlining recommendations on how best to implement the tool within existing clinical processes and workflows in order to most effectively operationalize the use and action of individual-level responses.

CMS AHC-HRSN:¹⁴ As part of their Accountable Health Community (AHC) model, the Centers for Medicaid and Medicare Services (CMS) developed a social risk-screening tool known as Accountable Health Communities (AHC) Health-Related Social Needs (HRSN). The tool includes 10 core measures and an additional 16 optional measures identifying individuals’ risk across several domains ([Table 2](#)). The AHC-HRSN tool aims to determine whether systematically identifying and addressing the health-related social risks of Medicaid and Medicare beneficiaries impacts their total healthcare costs and utilization, increases their quality of care, and improves their overall health.

KP YCLS:¹⁵ Kaiser Permanente (KP) and the Care Management Institute developed the Your Current Life Situation (YCLS) social risk screening tool after identifying a gap in their ability to collect and measure their members’ social risk factors in a standardized way. The tool consists of 9 core measures and 21 additional conditional measures assessing risk across several domains ([Table 2](#)). Once an individual has completed the YCLS assessment, KP has developed an integration functionality with certain EHR systems (e.g., Epic), in which the data can be manually entered into structure fields and mapped to standard coding vocabularies.¹⁶ YCLS incorporates indications for positive screenings that might require referral, advice, or an alteration of how care is provided.

For a comparison of core measures assessed by these featured social risk screening tools, see [Table 2](#).

Table 2. Core Measures by Risk Domain for Each Featured Social Risk Screening

Domain	NACHC PRAPARE ¹⁷	CMS AHC-HRSN ¹⁸	KP YCLS ¹⁹
Demographics / Personal Characteristics	Are you Hispanic or Latino Which race(s) are you? At any point in the past 2 years, has seasonal or migrant farm work been your or your family’s main source of income? Have you been discharged from the U.S. armed forces? What language are you most comfortable speaking?	N/A	N/A
Education	What is the highest level of school that you have finished?	N/A	N/A

Domain	NACHC PRAPARE ¹⁷	CMS AHC-HRSN ¹⁸	KP YCLS ¹⁹
Employment	What is your current work situation?	N/A	Do you currently receive help with employment?
Food Security	In the past year, have you or any family members you live with been unable to get food when it was really needed?	Within the past 12 months, have you worried that your food would run out before you could buy more? Within the last 12 months, has the food that you bought not lasted or did you not have enough money to buy more?	In the past 3 months, how often have you worried that your food would run out before you had money to buy more? Do you currently receive help with food?
Housing Stability & Quality	How many family members, including yourself, do you currently live with? What is your housing situation today? Are you worried about losing your housing? What address do you live at?	What is your living situation today?*	How best describes your current living situation? Do you have any concerns about your current living situation, like housing conditions, safety, and costs? Do you currently receive help with housing?
Income / Financial Strain	During the past year, what was the total combined income for you and the family members you live with?	N/A	In the past 3 months, did you have trouble paying for certain resources?
Insurance Status	What is your main insurance?	N/A	N/A
Material Security / Resources	In the past year, have you or any family members you live with been unable to get clothing/child care/medicine or any healthcare/phone/other when it was really needed?	N/A	If for any reason you need help with activities of daily living such as bathing, preparing meals, shopping, managing finances, etc., do you get the help that you need? Do you currently receive help with medical care/dental services/vision services/applying for benefits/daily living/child care/debt or loan payment/legal issues/other?
Safety / Domestic Violence	N/A	How often does anyone, including family and friends, physically hurt/insult or talk down/threaten/scream or curse at you?	N/A

Domain	NACHC PRAPARE ¹⁷	CMS AHC-HRSN ¹⁸	KP YCLS ¹⁹
Social Integration & Support	How often do you see or talk to people that you care about and feel close to? How stressed are you?	N/A	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
Transportation Access	Has lack of transportation kept you from medical appointments, meetings, work, or from getting things needed for daily living?	In the past 12 months, has a lack of reliable transportation kept you from medical appointments, meetings, work, or from getting things needed for daily living?*	Has lack of transportation kept you from medical appointments or from doing things needed for daily living?*
Utilities	In the past year, have you or any family members you live with been unable to get utilities when it was really needed?	In the past 12 months, has the electric, gas, oil, or water company threatened to shut off services in your home?	Do you currently receive help with utilities?
Optional Measure Domains	Incarceration History Refugee Status Safety/Domestic Violence	Disabilities Education Employment Income/Financial Strain Mental Health Physical Activity Social Integration & Support Substance Use	Caregiver Responsibilities Food Security Health/Functional Status Health Literacy/Confidence Income/Financial Strain Material Security/Resources Safety/Domestic Violence Social Integration & Support* Substance Use

* Adapted from the equivalent version of the PRAPARE assessment question

Other Noteworthy Tools:⁵ In addition to those featured in this report, there are many other multi-domain social risk screening tools available in the field depending on the system, setting, and population served. Most notable among other available tools include HealthBegins, HelpSteps, Health Leads, IHELLP Questionnaire, Legal Checkup, Partners in Health, Social Needs Checklist, Structural Vulnerability Assessment Tool, Urban Life Stressors Scale, and WeCare. For a comparison of which risk domains are measured by these various instruments, see [Table 3](#).

Table 3. Domains Measured by Other Noteworthy Social Risk Screening Tools⁵

Domain	Social Risk Screening Tool
Caregiver Responsibilities	YCLS
Demographics / Personal Characteristics	PRAPARE, IHELLP, Structural Vulnerability Assessment Tool
Disabilities	AHC-HRSN
Discrimination	Structural Vulnerability Assessment Tool, Urban Life Stressors Scale
Education	PRAPARE, AHC-HRSN, HealthBegins, HelpSteps, WeCare
Employment	PRAPARE, AHC-HRSN, YCLS, HealthBegins, HelpSteps, Health Leads, IHELLP, Legal Checkup, Partners in Health, Social Needs

Domain	Social Risk Screening Tool
	Checklist, Structural Vulnerability Assessment Tool, Urban Life Stressors Scale, WeCare
Food Security	PRAPARE, AHC-HRSN, YCLS, HealthBegins, HelpSteps, Health Leads, IHELLP, Legal Checkup, Social Needs Checklist, Structural Vulnerability Assessment Tool, WeCare
Health/Functional Status	YCLS, Partners in Health, Structural Vulnerability Assessment Tool, WeCare
Health Literacy/Confidence	Health Leads, YCLS, Social Needs Checklist, Structural Vulnerability Assessment Tool
Housing Stability & Quality	PRAPARE, AHC-HRSN, YCLS, HealthBegins, HelpSteps, Health Leads, IHELLP, Legal Checkup, Partners in Health, Structural Vulnerability Assessment Tool, Urban Life Stressors Scale, WeCare
Incarceration History	PRAPARE, HealthBegins, Structural Vulnerability Assessment Tool
Income / Financial Strain	PRAPARE, AHC-HRSN, YCLS, HealthBegins, HelpSteps, Health Leads, IHELLP, Legal Checkup, Partners in Health, Social Needs Checklist, Structural Vulnerability Assessment Tool, Urban Life Stressors Scale
Insurance Status	PRAPARE, Legal Checkup
Material Security / Resources	PRAPARE, YCLS, HealthBegins, HelpSteps, IHELLP
Mental Health	AHC-HRSN
Physical Activity	AHC-HRSN
Refugee Status	PRAPARE, HealthBegins, IHELLP, Legal Checkup, Structural Vulnerability Assessment Tool
Safety / Domestic Violence	PRAPARE, AHC-HRSN, YCLS, HealthBegins, HelpSteps, IHELLP, Legal Checkup, Structural Vulnerability Assessment Tool, Urban Life Stressors Scale, WeCare
Social Integration & Support	PRAPARE, AHC-HRSN, YCLS, HealthBegins, Health Leads, Partners in Health, Social Needs Checklist, Structural Vulnerability Assessment Tool, Urban Life Stressors Scale
Substance Use	AHC-HRSN, YCLS
Transportation Access	PRAPARE, AHC-HRSN, HealthBegins, Health Leads, Partners in Health, Social Needs Checklist, Urban Life Stressors Scale
Utilities	PRAPARE, AHC-HRSN, YCLS

Despite evident interest and effort in the creation of social risk screening tools to help further varied agendas, a challenge with their current approach is that there is not yet any broad-scale adoption or consistency in their implementation within the medical field¹². Clinicians have commonly expressed frustration in their inability to assess social risk factor information with a single, unified instrument that adopts a single, unified measure set. Often, various federal, state, and/or community programs recommend or require the implementation of different tools or workflows, each with similar yet distinct processes, protocols, questions, and resource demands to meet programmatic reporting requirements (e.g., population health management, quality reporting, risk adjustment/stratification objectives). In addition to the burden placed on clinicians and patients alike in maintaining multiple tools, confusion can

arise around how clinicians should interpret seemingly comparable, though potentially contradictory, responses collected from multiple tools in order to take effective follow-on action.

Furthermore, while stakeholders within the medical field may be considered the most technologically, operationally, and financially able to implement such tool(s), the value and effort of understanding social risk factor information is greatly reduced if there is generally a lack of resources and infrastructure available within community, social, and population health environments enabling their technical connection, operational engagement, and financial investment to them – a barrier furthered by the medical field’s adoption of multiple instruments and disjointed measure sets. Effective screening for social risk factors would not only promote appropriate medical intervention but also anticipate and respond to social health-related needs through an integrated and collaborative design with cross-sector partners.

Recognizing that there is not yet a one-size-fits-all strategy to capturing social risk factor information, the [Social Interventions Research and Evaluation Network \(SIREN\)](#), a collaborative supported by Kaiser Permanente and the Robert Wood Johnson Foundation,²⁰ established [The Gravity Project](#). Represented by experts from healthcare, community health, and health information technology, The Gravity Project seeks to develop a comprehensive strategy for standardizing social risk factor information captured from various assessments in such a way that would enable the interoperable exchange – and understanding – of the information with other systems and stakeholders. In addition to standardizing assessment activities (“screeners”), the project also provides documentation on how to capture and structure related problems/health concerns (“diagnoses”), objective setting exercises (“goals”), and treatment and follow-up information (“interventions”).²¹ Together, these standards aim to tell a cohesive story of an individual’s social risk factors. Starting with the initial measurement and recording of the risk through a social risk screening tool (screener), which facilitates the interpretation and validation of the risk and its potential determination as a health concern or condition by a licensed provider (diagnosis), followed by the creation of objectives defined by both individuals and their providers to mitigate the identified risk (goals), and ending with the documentation and initiation of specific actions aimed to address the assessed risk(s) (interventions)²².

The Gravity Project aims to accomplish this task of wide-scale interoperability by first identifying the common measures (i.e., data elements) and their associated responses (i.e., value sets) used by various social risk screening tools and other related assessments/surveys/questionnaires that fall within the project’s three initial priority domains: (1) food security, (2) housing stability and quality, and (3) transportation access. These domains were initially selected by the project based on substantial research conducted to date linking the domains (i.e., structural determinants) with communities’ (i.e., social determinants) and individuals’ (i.e., social risk factors) health-related risks, conditions, and outcomes. More recently, the project has included social isolation and stress domains within its purview.

Using a consensus-based approach to gather recommendations, the project determines how best to capture and group defined data elements and their respective value sets for interoperable electronic exchange and aggregation by using available national coding vocabularies (e.g., ICD-10, LOINC, SNOMED, etc.). Where coding standards exist, The Gravity Project simply recommends their appropriate use. For example, the screener response of *food* to the PRAPARE tool’s question asking *which resource(s) individuals or their family members have been unable to obtain access to in the past year* could be coded using the LOINC panel ‘93025-5’, code ‘93031-3’, and answer identifier ‘LA30125-1’²³. If a provider then wanted to attach a diagnosis code to the individual’s encounter to validate the health concern, they could use the ICD-10 code ‘Z59.4’ to identify the individual as lacking adequate food and drinking water²⁴.

On the other hand, where coding standards do not yet exist, The Gravity Project routinely submits proposals to coding stewards requesting that they address critical data concept gaps identified through their work. For example, The Gravity Project is currently proposing the bifurcation of the ICD-10 code ‘Z-

59.4' to differentiate *lack of adequate food* ('Z59.41') from *food insecure* ('Z59.42')²⁵. Proposals accepted by coding stewards are then made available for broader use in future version releases of their respective vocabularies. For an overview of each of The Gravity Project's three initial priority domains, including their definition, relevance, and proposed value sets, see [Table 4](#).

Table 4. Definition and Relevance of Priority Risk Domains

Domain	Definition ⁶	Relevance	Value Sets ²²
Food Security	Individuals' access to food and/or the necessary tools to prepare meals and/or competence of how to prepare meals successfully.	10.5% (13.7 million) of U.S. households experienced food insecurity during 2019 ²⁶ . Of those households, individuals may be at increased risk for obesity and chronic disease like hypertension and diabetes ²⁷ . These individuals have been found to face greater healthcare costs, totaling \$52.9 billion in 2016 ²⁸ .	View Online
Housing Stability & Quality	Homelessness – Individuals who are lacking housing, including the use of shelters, transitional housing, and other day-to-day paid options (e.g., motels, hotels, etc.), or who are living with others temporarily or on the street. Housing Insecurity – Individuals who are at risk of losing their homes due to the inability to consistently afford payments. Housing Inadequacy – Individuals who are living in housing of poor quality and/or condition.	Lack of stable and/or quality housing introduces stress that can result in disruptions to employment, education, and receipt and effectiveness of medical, behavioral health, and social service benefits ²⁹ . A study examining a subset of Oregon residents with unstable housing demonstrated that providing affordable housing decreased Medicaid expenditures by 12%, increased outpatient primary care by 20%, and decreased emergency department use by 18% ³⁰ .	View Online
Transportation Access	Individuals' abilities to get to and from work, access healthy food options, visit healthcare providers, and generally travel to and from appointments and other locations critical to daily living.	Each year, nearly 3.6 million individuals in the U.S. do not obtain the necessary care due to transportation access issues. Research indicates that a lack of transportation most severely impacts access to pharmacies (and thus medication fills and adherence), opportunities for timely evaluation and treatment of chronic conditions, and greater use of emergency department rooms in lieu of primary care or alternative services ³¹ .	View Online

On October 23, 2020, The Gravity Project also submitted its collection of documentation and use cases to the [Office of the National Coordinator for Health Information Technology \(ONC\)](#) as a recommendation to

establish a new ‘social determinants of health’ data class³² in the second version of the [United States Core Data for Interoperability \(USCDI\)](#)³³. Within the USCDI framework, a ‘data class’ is defined as “an aggregation of various data elements by a common theme or use case” (e.g., patient demographics) and a ‘data element’ is defined as “the most granular level at which a piece of data is exchanged” (e.g., first name, last name)³⁴. The first version of the USCDI, which was adopted as a standard in ONC’s Cures Act Final Rule³⁵, represented an initial set of standardized health data classes and constituent data elements for nationwide interoperable health information exchange; the standard replaces the Common Clinical Data Set (CCDS) in this objective. Version two of the standard targeted an expanded definition of common health data terminology.

On July 9, 2021, ONC released the second version of the USCDI³⁶. In it, The Gravity Project’s recommendation was approved, though broken into four separate data elements within four separate data classes, rather than within a single data class of its own as originally proposed. Those data classes/data elements include: (1) Assessment and Plan of Treatment (data class), SDOH Assessment (data element); (2) Problems (data class), SDOH Problems/Health Concerns (data element); (3) Goals (data class), SDOH Goals (data element); (4) Procedures (data class), SDOH Interventions (data element). In their press release, Micky Tripathi, Ph.D., National Coordinator for Health Information Technology, said, “USCDI version two builds on the feedback we received from a wide variety of stakeholders. We heard that this new version of the USCDI should reflect America’s diversity and include data elements like sexual orientation, gender identity, and social determinants of health while helping to address disparities in health outcomes for minoritized, marginalized, and underrepresented individuals and communities³⁷.”

Through the work led by The Gravity Project, non-medical concepts collected from varied social risk screening tools and their mixed measure sets are increasingly being translated into universally understood and meaningful risks (screeners), conditions (diagnoses), and outcomes (goals, interventions). Coding the concepts helps to remove much of the ambiguity and nuance introduced when trying to interpret each screening tool’s measures, responses, and subsequent evaluations and actions, especially when multiple instruments are implemented within the same organization/community. Additionally, the project’s efforts have greatly enhanced the utility, value, and development of third-party interoperable solutions. For stakeholders that want to take advantage of the outputs derived from various social risk screening tools, but may not have the resources and/or infrastructure to support their integration, these solutions allow structured and standardized social risk factor information to be more easily compiled in a single location within secure infrastructure maintained outside of stakeholders’ environments. These ecosystems alleviate much of the technological burden for stakeholders within and across systems of care, allowing them to most effectively and efficiently coordinate, communicate, and manage care for individuals regardless of the setting in which they are seen.

Sharing Social Risk Factor Information

The concept of ‘health information exchange’ (HIE) was first developed in a 2001 report published by the National Committee on Vital and Health Statistics highlighting the importance of investing in clinical health information technologies as a way of achieving wide-scale improvements in the healthcare system³⁸. The report proffered that enabling the secure exchange of critical information about an individual’s healthcare activities and medical history with their treating clinicians regardless of organizational affiliation would result in safer, more seamless, and higher quality delivery of care. This concept was formally codified by the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009³⁹ and, since then, the ONC has been responsible for developing national clinical data exchange standards (e.g., USCDI), EHR system certification requirements, and HIE-related policies⁴⁰. Today, there are hundreds of community-, state-, regional-, and national-level HIE efforts underway across the country⁴¹.

HIE, as a concept, is an example of the kind of health information technology ecosystem that could expand the way care is delivered to individuals who overlap diverse systems. Though, because the HIE network has often exclusively included stakeholders from the medical field to benefit from its practices, adopting the legacy term to describe the level of cross-sector collaboration required to address upstream factors is seen as a risk to over-medicalizing socioeconomic hardship and alienating the community-, social- and population-based stakeholders that healthcare systems depend on to deliver the necessary supports and services⁴². As a first step in breaking through the boundaries reinforced by the medical field's conventional use of health information exchange, the concept of 'community health information exchange' (CHIE) has been more widely accepted and adopted⁴³.

The CHIE concept expands on the traditional HIE model through the creation of an ecosystem comprised of network partners (i.e., stakeholders from diverse systems of care), a shared language (e.g., Diderichsen's definitions, The Gravity Project's recommendations, the USCDI version 2 standard) and an integrated technology platform (i.e., to support the creation of a longitudinal health record) that compiles and aggregates individuals' social risk factor information with

Figure 3. CIE Value Proposition



their relevant medical record information to inform person-critical care coordination, communication, and management solutions⁴⁴. Though the types of services that a CHIE could offer (e.g., inclusion of a universal social risk screening tool, a closed-loop referral management function, event-based clinical and community notifications, population-level analyses of structural and social determinants, etc.) may vary depending on the system's steward and may evolve over time as new use cases and value propositions emerge, the mission of any CHIE remains the same: to encourage a paradigm shift in the way care is delivered by expanding the definition of what it means to deliver comprehensive patient care (Figure 3). Individuals whose health information is shared through the CHIE benefit from the framework's inherent design by only having to tell their 'story' (of risks, needs, opportunities, barriers, etc.) once to their various cross-sector providers.

To illustrate, imagine that an individual visits their primary care practice for their routine annual exam. The practice has implemented the PRAPARE social risk screening tool, which the individual is asked to complete electronically while waiting for their provider. Upon review of the individual's screener responses, the provider observes that the individual has self-identified as at-risk for food insecurity. After a conversation with the individual to evaluate their current living condition, and in conjunction with a review of their medical and social histories, the provider determines a diagnosis to identify the individual as lacking adequate food and drinking water and a goal for the individual to become food secure in the next 1-2 months. Because the practice participates in their regional CHIE, these data points are automatically translated into structured value sets (screener = LOINC code 'LA30125-1'; diagnosis = ICD-10 code 'Z59.4'; goal = SNOMED code '1078229009'⁴⁵) and shared electronically with all CHIE-participating stakeholders via a central technology platform. Based on the functions available within the CHIE system, the individual's provider is then able to make a referral directly within the platform to a local food pantry (intervention = SNOMED code '713109004'⁴⁶). Once the referral has been made and the individual becomes a client, the pantry is able to configure their CHIE account to be notified each time the individual

is admitted to and discharged from the hospital. That way the pantry knows when exactly to pause and resume their services to prevent food waste. And when the individual switches primary care providers just a few months later due to a change in their health insurance, their new provider, who is also a CHIE participant, is able to glean these and other valuable insights into the individual's health, wellness, and wellbeing before their visit.

While there may be barriers and challenges to overcome in establishing the appropriate data governance (e.g., patient consent, privacy and security, data authorization and provenance) and technical infrastructure (e.g., interoperable technology, CHIE function design, analysis and evaluation, etc.) within the traditional HIE model necessary to bolster the kind of care coordination, communication, and management efforts aspired by the CHIE model, the ecosystem offers the type of systematic evaluation and action necessary at the individual (micro), community (mezzo), and society (macro) levels to effect change. At the micro level, individuals benefit from a universally shared longitudinal health record that enables greater interaction among their providers. In this 'no wrong door' approach, individuals can receive assistance with system navigation and obtain quicker connection to appropriate services as a result of only having to tell their story once to all stakeholders involved in their care. At the mezzo level, providers are empowered to collaborate across sectors to deliver comprehensive care. They are given greater awareness of community resources through an integrated network, which helps to reduce duplication of efforts and improve access to outcomes data to inform plans and assess impact. And lastly, at the macro level, communities are given insights into broader trends that can be learned from to identify unmet needs, barriers, and disparities in access to services. Such transparency can then inform community planning, policy, and advocacy to drive more informed and equitable allocation of resources.

By focusing on these core components, a CHIE allows communities to "shift away from a reactive approach to providing care" and move toward "proactive, holistic, person-centered care"⁴⁷. The [San Diego Community Information Exchange \(CIE\)](#) and the [St. Louis Regional Data Alliance](#) are considered as national frontrunners in this effort of increased cross-sector interoperability. In San Diego, 105 community partners, led by 211 San Diego, have effectively established an integrated technology platform that coordinates care and shares information electronically about individuals' healthcare activities. The platform includes a universal social risk screening tool, a social risk rating scale measuring an individual's immediacy of need, knowledge, and utilization of resources, as well as 211's resource directory that enables the creation of a closed-loop referral management function among participating providers. From the successes of their efforts in San Diego, 211 San Diego has initiated a national learning network for communities across the country interested in understanding the value of cross-sector collaboration and data sharing by offering resources and assistance to replicate the San Diego CIE model elsewhere⁴⁷.

Project Overview

Prior Collaboration Among HealthInfoNet, the MPCA, & Maine's FQHCs

[HealthInfoNet](#) is an independent nonprofit health information services company based in New Gloucester, Maine. Launched in 2006 with support from Maine's largest health systems, the company was designated in statute⁴⁸ as operator of the statewide HIE and charged to connect unaffiliated healthcare sites across the state with the purpose of facilitating the secure exchange of individuals' electronic health records in the value of improving care experiences. Since 2006, HealthInfoNet has connected more than 850 healthcare locations across the state, including all health systems, acute care hospitals, critical access hospitals, FQHCs, and Maine Emergency Medical Services (EMS) agencies, along with a majority of ambulatory, behavioral health, laboratory, and long-term care facilities. In addition to standard data integration and enhancement services, the company provides a number of data dissemination and visualization services to its participants, including access to its longitudinal electronic health record

systems, real-time event notifications, public health reporting, predictive risk analytics, and quality performance measurement.

In recent years, HealthInfoNet has incrementally worked toward building on the successes of the statewide HIE by expanding its use cases, data sources, and services to be encompassing of community perspective. With an evident appetite in Maine to set in motion the paradigm shift of how care is delivered by placing greater emphasis on upstream factors, the company has partnered with organizations like the [Maine Council on Aging](#), [Maine Health Access Foundation](#), [Maine Medical Association Center for Quality Improvement](#), and the [Department of Health and Human Services' Offices of MaineCare Services](#) (Maine's Medicaid agency) and Aging and Disability Services on several separate, but related, cross-sector projects.

Additionally, since 2016, HealthInfoNet has participated in the Robert Wood Johnson Foundation's [Data Across Sectors for Health \(DASH\) collaborative](#), a learning network which seeks to assist communities across the country with technical and engagement foundations for enabling multi-sector data-sharing practices. In one of its initial DASH projects, HealthInfoNet had the opportunity to work closely with [York County Community Action Corporation \(YCCAC\)](#), one of only a few organizations nationally that serves as both a community action agency and as a FQHC (Nasson Health Care). The project examined YCCAC's and Nasson Health Care's challenges of sharing individual-level information between their integrated clinical and community settings. At the same time, HealthInfoNet and other FQHCs across the state were also beginning discussions on how the statewide HIE infrastructure could be leveraged to collect, disseminate, and employ discrete social risk factor data elements received from FQHCs for care management and population health management purposes.

As a result of this project and other related conversations, HealthInfoNet established an important partnership with the [MPCA](#). In their work, the MPCA aims to strengthen Maine's FQHCs with programs and services such as clinical quality improvement initiatives, workforce development, community outreach, health information technologies, risk management planning, and strategic and technical planning assistance. Additionally, the organization provides a linkage between FQHCs and community, state, and federal partners to champion and maximize the value of Maine's FQHC communities.

Through a grant awarded by the HRSA to the MPCA in its role as the Health Center Controlled Network (HCCN) in the state of Maine⁴⁹, the MPCA was given a unique opportunity to increase the adoption of health information technology among its FQHC members with the goal of enhancing patient and provider care experiences, advancing technical interoperability, and improving operational and clinical practices through the use of data. With HealthInfoNet's guidance, the MPCA devised a two-year strategy for enhancing their FQHC members' health information technology infrastructure. The first year of activities focused on onboarding the remaining non-HIE-participant FQHCs in the state to HealthInfoNet's services, while the second year of activities involved the creation of a learning group charged with understanding the use of social health information among the MPCA's FQHC members. For the purposes of this report, only the grant's second year of activities will be reviewed in detail.

HealthInfoNet & MPCA's Convening Effort with Maine's FQHCs

The MPCA and its FQHC members enlisted HealthInfoNet to apply its experience and expertise in health information technology and related strategies to lead the social health data learning group, which it modeled as a collaborative convening project. As a first step in the effort, HealthInfoNet, with guidance from the MPCA, identified a subset of the MPCA's FQHC members to include in its planning committee. Key to this process was the selection of participants representing varying community attributes (e.g., differences observed within/between urban and rural communities) and readiness/maturity to advance social health data strategies. For more information on which of Maine's FQHCs were represented as participants in this project, see [Table 5](#).

Table 5. Project Planning Committee Participants

FQHC Participant Name	FQHC Participant Website
Eastport Health Care (EHC)	https://www.eastporthealth.org/
HealthReach Community Health Centers (HCHC)	http://www.healthreachchc.org/
Katahdin Valley Health Center (KVHC)	https://www.kvhc.org/
Nasson Health Care (NHC)	https://nassonhealthcare.org/
Penobscot Community Health Care (PCHC)	https://pchc.com/
Sacopee Valley Health Center (SVHC)	https://svhc.org/

FQHC participants engaged in a 6-month convening process between January 2021 and June 2021 involving one-on-one interview-style sessions, small-group workshops, and a collaborative forum. Due to the ongoing impacts of the COVID-19 pandemic and related response efforts, levels of engagement varied among FQHC participants based on their respective resource availability and capacity. Furthermore, in accordance with safety protocols enforced by the Maine Centers for Disease Control and Prevention in effect throughout the duration of the project, all engagement methods and techniques were conducted virtually via Zoom-based video conferencing. With the adjustments made to both the project's timeline and its methodology, deeper investigation into each participant's technical capacities with their respective EHR/technical partners (per the project's previously defined objectives) was eliminated from the project's scope and instead suggested as a future action as part of this report's recommendations (see [Recommendation 2.1.1](#)).

For more information about this project's timelines and associated milestones, see [Table 6](#).

Table 6. Project Timeline & Milestones

Timing	Domain	Activity
January 2021	Learning & Assessment	Identify planning committee attendees and stakeholders; develop project timelines and milestones
February thru March 2021	Information Gathering	Survey FQHC participants individually and conduct related research independently to frame subsequent discussions
April thru May 2021	Collaborative Forum	Present purpose, background, and findings to planning committee; receive feedback to inform recommendations
June 2021	Report Development	Draft formal report including recommendations for improved data collection, exchange, and operationalization strategies
July thru August 2021	Stakeholder Report Review & Finalization	Distribute draft report to MPCA leadership and planning committee for review; finalize report and disseminate

Throughout the course of the project's convening effort, HealthInfoNet and the MPCA pursued the following three (3) objectives with the FQHC participants:

1. Assess each participating FQHC's capacity to:
 - a. Identify where social risk factor data elements are stored in internal technical system(s) (e.g., EHR systems);
 - b. Identify which social risk factor data elements are actively shared with the HIE and/or which data elements not actively exchanged could be shared with the HIE; and,
 - c. For those social risk factor data elements not actively shared with the HIE, identify the necessary data submission method(s) (i.e., interface) enabling their exchange.

2. Prioritize the collection of social risk factor data elements for care management, population health management, and/or value-based purchasing purposes.
3. Develop recommendations outlining a core set of social risk factor data elements that could be collected, stored, and shared with the HIE by most FQHCs' technical systems.

In its first engagement with FQHC participants, HealthInfoNet developed a survey that it administered verbally through one-on-one interview-style sessions. The following set of five (5) standard questions were asked in alignment with the convening's objectives:

1. How is social risk factor information collected and stored in your technical systems?
2. What social risk factor information is actively shared with the statewide HIE?
3. What social risk factor information is not actively shared with the statewide HIE?
4. What existing social risk factor information is a priority to collect or share by your organization with other involved stakeholders?
5. Which social risk domains (e.g., food security, transportation access, etc.) are a priority for your organization to establish intervention and/or prevention strategies?

Upon collecting responses from each FQHC participant, HealthInfoNet and the MPCA followed-up separately with certain participants to clarify responses in small-group workshops as needed before convening all FQHC participants in a collaborative forum setting where the project's purpose, background, and survey results were presented for initial review and feedback. As a result of the project's engagement efforts, several themes emerged. In the sections that follow in this report, these themes will be explored in detail, beginning with a summary of findings from one-on-one interviews, open-ended conversations, small-group workshops, and the collaborative forum. Using the insights collected from these sessions, recommendations directed at establishing a unified set of related data collection, exchange, and operationalization strategies among Maine's FQHC communities will be provided for future consideration.

Findings

Over the course of the convening and engagement process, a few key themes emerged that informed the effort's proposed recommendations. Those findings are included in the following section.

FQHCs' Leadership & Innovation Role in Redefining the Care Delivery Model

In Maine and nationally, FQHCs are on the front lines of addressing and improving the quality and cost-effectiveness of care for individuals with complex medical and social risks, conditions, and outcomes. Because they serve medically underserved populations regardless of individuals' abilities to pay for services or eligibility for health insurance, FQHCs are able to overcome common barriers to obtaining care by establishing unique relationships with individuals suffering from a variety of risk factors, such as homelessness, mental health issues, financial hardship, chronic disease, and a lack of basic social supports. In addition to the primary care, behavioral health, oral health, and various specialty services (e.g., health and nutrition education, chronic disease management, physical therapy, etc.) that they commonly offer, FQHCs create critical partnerships with community-based organizations and social services to augment their core medical services as a way of forming an open, cross-sector dialogue to addressing emerging person-centered strategies.

The collection, exchange, and operationalization of social risk factor information gleaned from social risk screening tools is of tremendous clinical value to FQHCs in Maine. Through the systematic evaluation, documentation, and integration of social risk factor information derived from social risk screening tools, FQHCs are more easily able to identify previously unknown barriers that may be impacting individuals' health, wellness, and wellbeing. As a result, they are better suited to refer individuals to the appropriate supports and services to receive necessary cross-sector care. As one FQHC participant aptly noted during the convening effort's collaborative forum, "we are designed to do this work."

With 20 health centers covering 70 separate service locations throughout the state, Maine's FQHC network spans as far north as Madawaska, south as Springvale, east as Lubec, and west as Porter—a comprehensive 'safety net' design (Figure 4). These locations serve nearly 210,000 patients each year, making up nearly 16% of Maine's total population⁵⁰. With diverse geographic locales (encompassing the spectrum of urban and rural settings), differing patient demographic profiles (varying in age, education level, employment and income, occupation, and race/ethnicity), and assorted community-based partnerships (based on cultural influences, neighborhood engagement, community interest, etc.), Maine's FQHCs are uniquely and strategically positioned to shift the paradigm of how care is delivered. For these reasons, FQHCs in Maine and beyond should be considered as innovators and leaders in this important work, from which other systems of care could greatly learn, adapt, and evolve.

For a summary of this finding into abbreviated statements, see Table 7.

Figure 4. Geographic Distribution of Maine's FQHCs

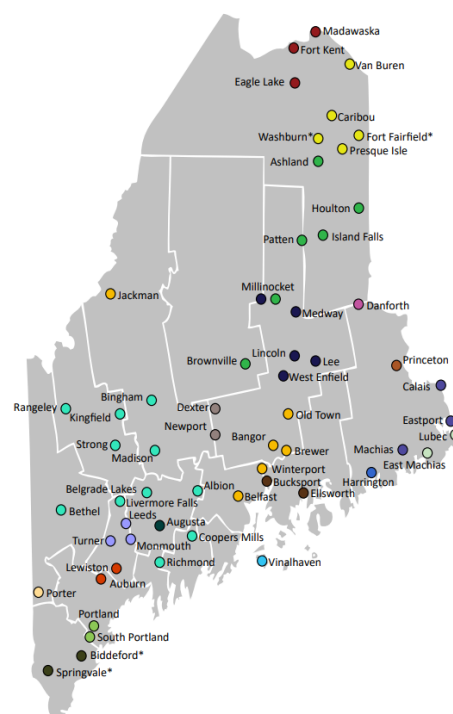


Table 7. Finding #1 Summary

Finding #1	
FQHCs serve in a role of leadership and innovation in redefining the care delivery model in Maine and beyond.	
#	Statement
1.1	The diverse, underserved populations cared for by Maine's FQHCs offer them a unique position in the healthcare system to have greater success in forming critical cross-sector partnerships to address complex medical and social conditions.
1.2	Maine's FQHCs find evident value in the adoption and use of social risk screening tools as a way of identifying previously unknown impacts to individuals' health, wellness, and wellbeing.

Opportunities to Overcome Varied Data Collection Strategies by Streamlining & Prioritizing Efforts

Of the six FQHCs evaluated through the project's convening effort, variation was identified not only in the specific social risk screening tool adopted by each participant, but also in the advancement and application of the same tool among them. Four participants have implemented the PRAPARE instrument, one participant has adopted a custom assessment developed by their organization, and another participant is leveraging a social history screening template available within their EHR system. Even within participants' PRAPARE implementations, there are a range of designs in which some participants are using the tool in its fully recommended application while others have chosen to adopt the tool in screening only certain patient populations (e.g., high-risk individuals) or with a limited measure set either to reduce redundancy in other data collection mechanisms (e.g., demographics, financial information) or in alignment with organization-specific priorities (e.g., food security, transportation access). Yet despite this variation, all six FQHCs store collected responses in their EHR systems. For a summary of participants' current data collection strategies, see [Table 8](#); for a review of the specific data elements captured by each participant's social risk screening tool, see [Table 9](#); and, for a summary of participants' current data storage strategies, see [Table 10](#).

Table 8. FQHC Participants' Current Data Collection Strategies

FQHC Participant	Data Collection Approach	Data Collection Design
EHC	Social history screening template	Leverages data elements from PRAPARE but in a format native to the EHR system
HCHC	PRAPARE assessment	Partial implementation; workflows prioritize screening high-risk patient populations
KVHC	PRAPARE assessment	Full implementation of assessment
NHC	PRAPARE assessment	Partial implementation; not collecting demographics or financial information
PCHC	PRAPARE assessment	Partial implementation; prioritizes data elements related to transportation access and food security risk domains
SVHC	Custom assessment	Uses homegrown assessment tool

Table 9. FQHC Participant's Current Data Elements Collected

Domain	EHC	HCHC	KVHC	NHC	PCHC	SVHC
Demographics / Personal Characteristics	PRAPARE	PRAPARE	PRAPARE	N/A	PRAPARE	N/A
Education	PRAPARE	PRAPARE	PRAPARE	PRAPARE	N/A	N/A
Employment	PRAPARE	PRAPARE	PRAPARE	PRAPARE	N/A	N/A
Food Security	PRAPARE	PRAPARE	PRAPARE	PRAPARE	PRAPARE	Do you experience food insecurity?
Housing Stability & Quality	PRAPARE	PRAPARE	PRAPARE	PRAPARE	N/A	Do you experience housing instability?
Incarceration History	PRAPARE	PRAPARE	PRAPARE	PRAPARE	N/A	N/A
Income / Financial Strain	PRAPARE	PRAPARE	PRAPARE	N/A	N/A	What is your household income?

Domain	EHC	HCHC	KVHC	NHC	PCHC	SVHC
Insurance Status	PRAPARE	PRAPARE	PRAPARE	PRAPARE	N/A	N/A
Material Security / Resources	PRAPARE	PRAPARE	PRAPARE	PRAPARE	N/A	N/A
Refugee Status	PRAPARE	PRAPARE	PRAPARE	PRAPARE	N/A	N/A
Safety / Domestic Violence	PRAPARE	PRAPARE	PRAPARE	PRAPARE	N/A	N/A
Social Integration & Support	PRAPARE	PRAPARE	PRAPARE	PRAPARE	N/A	N/A
Transportation Access	PRAPARE	PRAPARE	PRAPARE	PRAPARE	PRAPARE	Do you experience transportation access issues?
Utilities	PRAPARE	PRAPARE	PRAPARE	PRAPARE	N/A	N/A

Note: For a complete list of PRAPARE questions per domain, see Table 2.

Table 10. FQHC Participants' Current Data Storage Strategies

FQHC Participant	Data Storage Approach	Data Storage System
EHC	EHR system	athenaHealth
HCHC	EHR system	NextGen
KVHC	EHR system	athenaHealth
NHC	EHR system	NextGen
PCHC	EHR system	Centricity
SVHC	EHR system	NextGen

Furthermore, although each participant is collecting social risk factor information in some form, not all are actively sharing that information with the statewide HIE. Only two of the four PRAPARE implementations are sharing their measure responses. Of those two sharing participants, one is only providing diagnosis responses in the form of discrete ICD-10 codes within individuals' encounter-level records, while the other is providing screener responses in the form of non-discrete information embedded within the social history module of individuals' PDF-formatted office visit notes. The two non-sharing participants, on the other hand, are not currently formatting their responses in output enabled for exchange beyond their internal EHR systems. Of the non-standard implementations, the participant leveraging their EHR's social history screening template is also able to provide screener responses in the form of non-discrete information embedded within the social history module of individuals' PDF-formatted office visit notes. And again, the participant using their organization's custom assessment is not currently formatting their responses in output enabled for exchange beyond their internal EHR system. For a summary of participants' current data exchange strategies, see [Table 11](#).

Table 11. FQHC Participants' Current Data Exchange Strategies

FQHC Participant	Data Exchange Approach	Data Exchange Design
EHC	Currently sharing screener information with the Health Information Exchange	Shared as non-discrete, raw codes via the office visit note's social history module
HCHC	Not currently sharing any information with the Health Information Exchange	Requires conversation with participant's EHR vendor to assess future data submission method

FQHC Participant	Data Exchange Approach	Data Exchange Design
KVHC	Currently sharing screener with the Health Information Exchange	Shared as non-discrete, raw codes via the office visit note's social history module
NHC	Currently sharing diagnosis information with the Health Information Exchange	Shared as discrete, standardized codes via encounter records
PCHC	Not currently sharing any information with the Health Information Exchange	Requires conversation with participant's EHR vendor to assess future data submission method
SVHC	Not currently sharing any information with the Health Information Exchange	Requires conversation with participant's EHR vendor to assess future data submission method

When asked about the reasons for varied approaches in instrument selections, implementation designs, and data-sharing practices, each participant – regardless of their organization's strategies – roughly articulated the same observations. First, there is an incredible amount of difficulty in implementing any social risk factor screening tool. Even PRAPARE, the most common mechanism configured among participants, faces implementation challenges due to limited clinical staff, technical resources, and patient time. Hence, three of the four participants using PRAPARE have adopted partial implementations and two other participants have opted to use non-standard tools with less requirements to maintain. The participant leveraging their EHR's social history screening template, for example, has found it easier to operate a non-standard tool within established workflows while still benefitting from PRAPARE's accepted methodology by implementing the assessment's measure set.

Second, with any social risk factor screening tool, there is difficulty obtaining individuals' participation due to the potential stigma associated with their responses. Multiple participants noted that if a certain level of trust is not established between individuals and their providers, individuals may fear that their social risk factor information could result in discriminatory behaviors, such as isolation and refusal to services, which they and/or others such as their caregivers and family members or peers with similar attributes (e.g., sexual orientation, racial/ethnic identities, etc.) may encounter. This fear is further intensified with the movement to include individuals' social risk factor information within their comprehensive medical records. Participants' approaches to collecting and sharing related information therefore often varies in an effort to balance effectiveness with respectfulness. For example, participants may choose to modify, supplement, or eliminate assessment questions to be more empathetic or to receive results that are more accurate, not include certain assessment responses within active problems lists to prevent stigma from following individuals in subsequent healthcare encounters, or choose not to share certain information with certain providers to prevent its misinterpretation.

Where the consistency of social risk factor instruments, implementations, and data-sharing practices fall short in meeting broader strategic objectives, participants pointed to the UDS health center data reporting requirements administered by HRSA's Health Center Program as an alternative means of evaluating social risk factors. The UDS requires the consistent collection of information about the populations served by health centers, including demographics (e.g., age, race, ethnicity, sexual orientation, gender identity, etc.) and personal characteristics (income relative to federal poverty line, insurance coverage, homeless status, migrant or seasonal farmworker status, etc.), services rendered and select diagnoses, positive screening results for certain risk domains, quality of care indicators (consistent with the National Quality Strategy, CMS electronic Clinical Quality Measure (eCQM) specifications, and other national quality initiatives), health outcomes and disparities (in alignment with CMS eCQM), and associated costs of healthcare services⁵¹.

In their manual, HRSA recommends the collection of UDS data elements through a number of standard workflows, such as patient registration/intake procedures, EHR/billing/laboratory/other technical data-entry processes (e.g., social risk screening tools), and/or clinical quality improvement efforts. Among participants, there are mixed approaches in how UDS data elements are currently collected and stored; though, a few participants are using their adopted social risk screening tools to assist. The PRAPARE instrument, for example, explicitly attempts to align many of its core measures with the UDS reporting requirements to reduce the burden on providers of having to support multiple efforts. A review of which PRAPARE questions have been designed using UDS reporting requirements is provided in [Table 12](#).

Table 12. UDS Data Elements Contained in the PRAPARE Measure Set

Domain	PRAPARE Question ¹⁷	UDS Data Element? ⁵¹
Demographics / Personal Characteristics	Are you Hispanic or Latino	Yes (Table 3B, Lines 1-8, Columns A-C)
	Which race(s) are you?	Yes (Table 3B, Lines 1-8)
	At any point in the past 2 years, has seasonal or migrant farm work been your or your family's main source of income?	Yes (Table 4, Lines 14-15)
	Have you been discharged from the U.S. armed forces?	Yes Table 4, Line 25)
	What language are you most comfortable speaking?	Yes (Table 3B, Line 12)
Education	What is the highest level of school that you have finished?	No
Employment	What is your current work situation?	No
Food Security	In the past year, have you or any family members you live with been unable to get food when it was really needed?	Yes (Appendix D, Question 12a, Answer A)
Housing Stability & Quality	How many family members, including yourself, do you currently live with?	No
	What is your housing situation today?	Yes (Table 4, Lines 17-23; Appendix D, Question 12a, Answer B)
	Are you worried about losing your housing?	No
	What address do you live at?	No
Incarceration History (Optional Domain)	In the past year, have you spent more than 2 nights in a row in a jail, prison, detention center, or juvenile correctional facility?	No
Income / Financial Strain	During the past year, what was the total combined income for you and the family members you live with?	Yes (Table 4, Lines 1-6, Appendix D, Question 12a, Answer C)
Insurance Status	What is your main insurance?	Yes (Table 4, Lines 7-12)
Material Security / Resources	In the past year, have you or any family members you live with been unable to get clothing/child care/medicine or any healthcare/phone/other when it was really needed?	No

Domain	PRAPARE Question ¹⁷	UDS Data Element? ⁵¹
Refugee Status	Are you a refugee?	No
Safety / Domestic Violence (Optional Domain)	Do you feel physically and emotionally safe where you currently live?	No
	In the past year, have you been afraid of your partner or ex-partner?	No
Social Integration & Support (Optional Domain)	How often do you see or talk to people that you care about and feel close to? How stressed are you?	No
Transportation Access	Has lack of transportation kept you from medical appointments, meetings, work, or from getting things needed for daily living?	Yes (Appendix D, Question 12a, Answer D)
Utilities	In the past year, have you or any family members you live with been unable to get utilities when it was really needed?	No

However, in the case of the participant not collecting demographic or financial information through their PRAPARE tool, they have found that while the assessment's measure set offers actionable clinical value in their ability to identify, evaluate, and act on social risk factors, its methodology and output does not meet their need to respond to various other federal and state programmatic requirements that also draw on the UDS data elements. For that reason, their staff have established a separate workflow administered during registration/intake procedures to capture the demographic and financial information, as well as other UDS data elements – some of which (e.g., food security and transportation access) are also subsequently collected by providers during individuals' visits via the PRAPARE assessment.

At the time of this project's convening effort, each participant met the criteria of HRSA's 'health center' definition and therefore were required to collect the UDS data elements for mandated reporting purposes. For that reason, the UDS data set appeared to offer a potentially viable means of systematically collecting a unified measure set across Maine's FQHCs. However, considerations should be made for how the UDS data elements are collected (e.g., via social risk screening tools or other means), and, perhaps more importantly, for what intent they are collected (e.g., care management, population health management, value-based purchasing purposes, grant/funding efforts). Although some FQHCs may find a need to deviate from using the UDS outputs derived from social risk screening tools to meet other programmatic requirements (e.g., value-based purchasing, grant/funding), the tools nonetheless may offer a streamlined approach to collecting a unified subset of UDS data elements to inform more immediate clinical action (e.g., care management, population health management).

For a summary of this finding into abbreviated statements, see [Table 13](#).

Table 13. Finding #2 Summary

Finding #2
Varied data collection, storage, and exchange strategies may be able to be mitigated by streamlining and prioritizing efforts with other existing reporting requirements.

#	Statement
2.1	HRSA's UDS health center reporting requirement represents an opportunity shared among Maine's FQHCs to consistently and reliably collect a standard data set of social risk factor information with budgeted clinical staff, technical resources, and patient time.
2.2	Varied approaches in implementing social risk screening tools by Maine's FQHCs becomes less problematic if unified data sets are consistently collected through them (e.g., UDS) then stored and optimized for interoperable exchange within technical systems (i.e., EHRs).

Counteracting Limited Internal Capacity with External Guidance to Advance Data Strategies

Among participants, there are clear priorities (and increasing pressure) to more effectively and efficiently share available social risk factor data sets. Not only across their own organization's service locations and community partners, but also with peer FQHCs and participating Accountable Community Organization members, as well as among regional and state initiatives such as community action agencies, area agencies on aging, and service coordinating agencies. However, to date, participants have experienced difficulty in bridging the clinical and community divide for two primary reasons: (1) a lack of resources and infrastructure available internally and within community, social, and population health environments enabling technical connection, operational engagement, and financial investment to data-sharing solutions and (2) a lack of data governance and authorization decision-making and consensus regarding the type (e.g., medical and/or social health information) and level (e.g., population and/or individual) of information that non-medical stakeholders should be able to access within individuals' longitudinal health records for the purposes of improving care delivery practices.

Though even in cases where data does begin flowing across sectors, as one participant observed, "figuring out how to leverage [the information] is like trying to put a band-aid on some of our communities' biggest systemic problems." The ability to connect individuals with the necessary resources to address the health-related risks, conditions, and outcomes highlighted as a result of the assessments is often presented with a set of challenges similar to those previously encountered: limited clinical staff, technical resources, and patient time. These factors impact the type and amount of assistance that FQHCs can provide to individuals. Given the sheer number of risk domains that they are asked to address in their visits, many participants expressed feeling overwhelmed in their designated role as 'system navigator'—not due to an unwillingness to serve in the role, but due to constraints outside of their own control inhibiting their abilities to serve in it effectively.

Together, overcoming these obstacles requires a multi-faceted strategy with participants that begins with improving their interoperable exchange of information, leads to identifying high-priority risk domains for them to collectively focus on for the purposes of cross-sector collaboration, and ends with the creation of carefully curated data services that highlight population- and individual-level social health risks. Although FQHCs are naturally suited as community-based healthcare providers to pilot the effort, all project participants agreed that they need external assistance – strategically, technically, operationally, and financially—in order to be successful in their endeavors. Only then can their social health data strategies truly advance within and beyond their organizations to meet the various requirements and expectations placed upon them.

For a summary of this finding into abbreviated statements, see [Table 14](#).

Table 14. Finding #3 Summary

Finding #3	
Limited internal capacities among Maine's FQHCs and their network partners that inhibit their abilities to assist individuals who overlap systems of care may be able to be counteracted by external support provided to advance social health data strategies.	

#	Statement
3.1	Interoperable exchange of social risk factor information by Maine's FQHCs would benefit a myriad of community-, social-, and population-based stakeholders assisting individuals who overlap systems of care.
3.2	Maine's FQHCs need strategic, technical, financial, and operational guidance to systematically address social drivers of health in order to offset internal limitations and constraints.

Recommendations

As a result of this project's convening effort, HealthInfoNet and the MPCA developed a few key recommendations addressed to Maine's FQHCs to support and enhance their data collection, exchange, and operationalization strategies for improving the upstream factors impacting individuals' health-related risks, conditions, and outcomes. Those recommendations are included in the following section.

Data Collection

Recommending the implementation of a single social risk screening tool across Maine's FQHCs may not only conflict with the requirements of various federal, state, and/or community programs in which the organizations are involved, but may also deliver the wrong message that any other tool implemented is less acceptable or satisfactory when in fact any mechanism designed to collect social health information is a step in the right direction. Though PRAPARE may be the most ideal instrument due to its proven technical integration capabilities with EHRs, robust supporting documentation to assist clinicians with workflow best practices, and widespread adoption among participants surveyed in this project, the essential outcome of any successful implementation is that organizations feel comfortable in their selection of a tool that works within the confines of their unique circumstances.

Plus, as this project has demonstrated, non-standard tools can still be configured to include measures from the PRAPARE assessment. That way, organizations can benefit from a nationally accepted patient risk assessment protocol while using an instrument and approach more amenable to their organization's existing model of staff, time, and resources. This balance provides a strategic opportunity for Maine's FQHCs to collectively capture social risk factors derived from a unified measure set that relies on a standardized methodology. Further, focusing on the collection of UDS data elements within the PRAPARE assessment's measure set may not only offer some FQHCs a streamlined approach to systematically evaluating, documenting, and integrating a social risk factor data set required for other reporting purposes, but also help FQHCs with phased implementations to prioritize the collection of otherwise voluminous information.

Though alternative methods for collecting UDS data elements outside of the PRAPARE assessment's measure set may be valuable to help FQHCs meet various reporting requirements, their use for the purposes of advancing cross-sector care management and population health management strategies raises questions. Namely, the intent of the alternative methods (e.g., value-based purchasing purposes, grant/funding efforts, etc.) may cause confusion of how to interpret the responses for appropriate follow-on action. Effective cross-sector collaboration in the value of care management and population health management efforts requires a more transparent and accepted protocol, such as those offered through social risk screening tools.

For a summary of this recommendation and an outline of its detailed strategies, see [Table 15](#).

Table 15. Recommendation #1 Summary

Recommendation #1			
Collect and store a unified social risk factor data set through an electronic-based social risk screening tool that is achievable and actionable within each FQHC's current model of staff, time, and resources.			
Supporting Finding Statements: 1.2, 2.1, 2.2			
#	Strategy	Benefits (+) / Potential Barriers (±)	Lead
1.1	Select and configure a screening tool that facilitates the collection of social risk factor data elements and their respective value sets (i.e., screeners, diagnosis, goals, interventions) electronically, preferably via EHR system workflows. Note: When feasible, implementation of the PRAPARE assessment is recommended to more easily support strategies recommended in this report.	+ Encourages FQHCs to implement social risk screening tools convenient to their organization's technical, operational, and financial circumstances ± Electronic-based data collection, versus paper-based approaches, may challenge some FQHCs with limited technical capacities to implement	FQHC
1.2	Prioritize the collection of UDS data elements within the configured social risk screening tool. Use the UDS-related questions designed by the PRAPARE assessment to unify measure sets and methodologies with other FQHCs' data collection efforts. Note: For a review of which PRAPARE questions have been designed using UDS reporting requirements, see Table 12 .	+ Ensures the reliable collection of a core social risk factor data set within and across FQHCs that is measured with an accepted, standardized methodology + Potentially streamlines workflows for collecting a common social risk factor data set required by other programmatic requirements (e.g., UDS reporting efforts) ± FQHCs not already using the PRAPARE assessment's questions in their social risk screening tools to collect UDS data elements must technically and operationally configure the measures	FQHC
1.3	Enable the discrete storage of social risk factor data elements and their respective value sets within EHR/other technical systems' data warehouses. Note: Discrete storage refers to building distinct fields per data element to store their respective value sets; non-discrete storage refers to storing distinct data elements and their respective value sets as 'blob' objects embedded within documents or other non-distinct formats.	+ Creates actionable data sets that can be queried, parsed, and leveraged uniquely for diverse use cases + Strengthens FQHCs' interoperability by enabling meaningful exchange of social health data with external stakeholders ± Development of technical protocols to discretely parse and store data sets within data warehouses may represent the greatest challenge to FQHCs, as many are currently	FQHC

#	Strategy	Benefits (+) / Potential Barriers (±)	Lead
		storing responses as non-discrete 'blob' objects	
1.4	Add prompts within and throughout operational workflows to remind staff to complete the screening tool's assessment during individuals' visits and to populate each individual's health record with appropriate screener, diagnosis, goal, and intervention social risk factor information.	+ Ensures that social health data is collected consistently and reliably for each individual seen for care + Enables more reliable downstream outreach and reporting efforts with internal and external stakeholders ± Limited clinical staff and patient time may present FQHCs with difficulties in administering their social risk screening tool, regardless of additional prompts	FQHC

Data Exchange

In order for FQHCs to enhance their social health data exchange strategies, translating non-medical concepts into universally understood risks, conditions, and outcomes is a critical first step. That way, stakeholders within and across systems of care can more meaningfully digest and engage with the information. Systematically coding concepts into discrete values helps remove much of the ambiguity, nuance, and potential for error when relying on raw responses alone. When objective and concise, the values not only offer a shared language to be used among diverse network partners but also an analyzable form for various quality improvement, measurement, and reporting purposes.

Through their participation in the statewide HIE, Maine's FQHCs already benefit from HealthInfoNet's terminology management services. To identify key medical concepts, many of the health centers use homegrown local codes and descriptions rather than industry standard values. The HIE's terminology management services effectively cross-reference those local codes and descriptions specific to source systems to industry standard codes and descriptions in accordance with ICD-10, CPT, HCPCS, LOINC, SNOMED, RxNorm, and other national vocabularies. Additionally, the service allows FQHCs to flag certain values that need to be managed separately to satisfy special data management requirements, such as blocking or sequestering sensitive information (e.g., behavioral health data).

These same principles and functions can similarly be applied to social health information. If FQHCs deliver discrete social risk factor data elements and their respective value sets, the HIE's terminology management service can be configured to transform raw screener, diagnosis, goal, and intervention responses into standard coding vocabularies in alignment with specifications endorsed by The Gravity Project and now mandated by the second version of the USCDI. Furthermore, to consider challenges associated with the stigma of individuals' social risk factor responses, the service's blocking/sequestering feature could be employed to apply specific rules indicating what, when, and to whom certain information is leveraged in downstream HIE health information services.

For a summary of this recommendation and an outline of its detailed strategies, see [Table 16](#).

Table 16. Recommendation #2 Summary

Recommendation #2
Exchange discretely stored social risk factor data sets with the statewide HIE for further normalization, standardization, and aggregation in support of actionable downstream use cases and services.
Supporting Finding Statements: 2.2, 3.1

#	Strategy	Benefits (+) / Potential Barriers (±)	Lead
2.1	Electronically share discretely stored social risk factor data elements and their respective value sets with the statewide HIE. Note: As a minimum social risk factor data set, screener value sets are required to be submitted to the HIE; when possible, related diagnosis, goal, and intervention value sets should also be submitted. FQHCs must differentiate each type of social risk factor value set in their data submissions to the HIE.	+ Facilitates FQHCs' interoperable exchange of social risk factor data sets with diverse stakeholders using the statewide HIE as an intermediary + Establishes a consistent level of social risk factor information to be shared by all FQHCs (i.e., screeners) to support comparable uses of the data among HIE participants ± FQHCs unable to adhere to the data collection specifications outlined in Recommendation #1 will not benefit from the remaining strategies recommended in this report	FQHC & HealthInfoNet
2.1.1	Conduct a technical assessment of each FQHC's current data submission capabilities in alignment with the HIE's specifications.	+ Allows HealthInfoNet to identify the most viable data submission method with each FQHC upon their readiness to exchange social risk factor data sets ± Requires a collaborative effort among HealthInfoNet, FQHCs, and relevant FQHC technical partners to complete technical discovery work ± Modification to existing or development of new EHR interface connections may present blockers to immediate social health data exchange; secure file transfer protocol (SFTP) methods may offer a short-term solution while a long-term EHR solution is devised	HealthInfoNet & FQHC (FQHC Technical Partners)
2.2	Transform local social risk factor value sets into national coding vocabularies consistent with The Gravity Project's and the USCDI's specifications. Notes: • Where FQHCs adopt non-standard social risk screening measures not reflected in The Gravity Project's or the USCDI's specifications, a collaborative effort between HealthInfoNet and FQHCs will be required to define the appropriate translations. • If FQHCs would like to block/sequester specific sensitive social risk factor information from	+ Enables the consistent, reliable, and accurate transformation of raw social risk factor value sets into national coding vocabularies + Puts the technical effort of terminology management on HealthInfoNet, consistent with existing workflows among HIE participants for medical terminology standardization + Improves the interoperable exchange and broad understanding of social risk factor value sets with cross-sector partners + Enables the restriction of sensitive social risk factor information that	HealthInfoNet (FQHC)

#	Strategy	Benefits (+) / Potential Barriers (±)	Lead
	downstream HIE use cases, restrictions must be defined by each FQHC according to organization-specific requirements/requests.	may contribute to stigmatized healthcare experiences ± May require a collaborative effort among HealthInfoNet, FQHC, and relevant FQHC technical partners to define translations for non-standard measures and/or data restrictions	

Data Operationalization

Exchanging social health information with the statewide HIE naturally yields a more collaborative, community-focused, CHIE-like approach to care delivery. Pairing an individual's medical history with their social risk factors tells an important story about their overall health, wellness, and wellbeing. More importantly, it embraces the formation of an open, cross-sector dialogue to improving social drivers of health. To advance the coordination, communication, and management of care, while addressing unmet needs, barriers, and disparities in access to services, an integrated, empathetic design that effectively and respectfully bridges the clinical and community divide is necessary.

Leveraging the statewide HIE's shared technical infrastructure and existing data governance structure provides a starting point for Maine's FQHCs to more effectively and efficiently share social risk factor information both within and beyond their respective organizations. In accordance with the HIE's existing participant agreement construct, partner organizations that meet the definition of a 'covered entity' under HIPAA Rules may be entitled to obtain access to the HIE's suite of health information services. For organizations that do not meet such definition, future opportunities exist to expand cross-sector use of the HIE (i.e., beyond current authorized use cases), beginning with deeper investigation into the complexities of privacy and confidentiality laws on consent management and information sharing protocols.

Incorporation of social health information within the statewide HIE's health information services aims to supplement FQHC's and their network partners' own internal care management and population health management tools where gaps or restrictions in them may currently exist. Designed in collaboration with all involved stakeholders, the HIE's services can provide a common platform for users to leverage in identifying both organization-/community-specific needs and cross-community/statewide trends within high-priority risk domains. Through this process, deliberate steps can be taken to define the exact type and amount of medical and social health information shared through the HIE with each stakeholder in the value of creating safe and enjoyable, and not stigmatic, care experiences for individuals. At this point in the operationalization of social health data strategies, HealthInfoNet recommends its adoption of 'community health information exchange' descriptors to more accurately label its collaborative and integrated service design.

For a summary of this recommendation and an outline of its detailed strategies, see [Table 17](#).

Table 17. Recommendation #3 Summary

Recommendation #3
Identify common social health risk domains challenging Maine's FQHCs and expand the HIE's existing health information services to supplement internal care management and population health management efforts.
Supporting Finding Statements: 1.1, 3.1, 3.2

#	Strategy	Benefits (+) / Potential Barriers (±)	Responsibility
3.1	Incorporate transformed social risk factor data elements and their respective value sets within the statewide HIE's health information services. Develop use cases that focus on the following three priority risk domains: 1. Food Security 2. Housing Stability and Quality 3. Transportation Access For use case examples of integrating social risk factor data sets within HealthInfoNet's existing health information services, see Tables 18-20.	+ Allows FQHCs to leverage the statewide HIE's data infrastructure, data governance model, and technical expertise to supplement internal efforts in addressing social health data strategies + Prioritizes the development of health information services within risk domains aligned with national, state, and community focus areas ± Requires a collaborative effort among HealthInfoNet, MPCA, Maine's FQHCs, and cross-sector partners to design specific use cases to inform the development of tailored health information services ± Requires a collaborative effort among HealthInfoNet, MPCA, Maine's FQHCs, cross-sector partners, and community members with lived experience to ensure the HIE's services address stigma challenges with a mindful approach	HealthInfoNet (MPCA, FQHCs, and Other Stakeholders)
3.2	Identify community-, social-, and population-based stakeholders that may benefit from becoming a participant of the statewide HIE in order to obtain access to its suite of integrated health information services. Note: Initial new participant onboarding priorities include regional- and state-level community action agencies, area agencies on aging, and service coordinating agencies, per FQHC participants' direction, which are defined as authorized HIE participants.	+ Facilitates patient care coordination, communication, and management activities in the value of cross-sector collaboration + Leverages the existing conditions of HIE participation by enabling social health data exchange with authorized cross-sector partners ± Critical cross-sector partners that do not meet the definition of a covered entity under HIPAA Rules will not be able to obtain access to the HIE's health information services until more formal CHIE data governance efforts are finalized in the future	HealthInfoNet, (FQHCs, Selected Community/Social/Population Stakeholders)
3.3	Adopt the use of 'community health information exchange' to describe HealthInfoNet's suite of integrated services in place of the traditional 'health information exchange' definition.	+ Formalizes HealthInfoNet's position as a trusted, independent entity dedicated to helping its communities create lasting, system-wide improvements in the value of <i>cross-sector</i> care ± Requires additional review of the CHIE's governance structure in order to evolve the model beyond the traditional confines of the HIE	HealthInfoNet

Table 18. Food Security Services Case Study

Food Security
Individuals' access to food and/or the necessary tools to prepare meals and/or competence of how to prepare meals successfully ⁶ .
Data Element(s)/Value Set(s)
UDS Reporting:⁵¹ Appendix D, Question 12a: Please provide the total number of patients that screened positive for the following at any point during the calendar year. <i>Option = Food Insecurity</i> PRAPARE Measure:⁶ Question 14: In the past year, have you or any family members you live with been unable to get any of the following when it was really needed? <i>Response = Food</i>
Health Information Service
Real-time event notifications
Example Use Case
An at-risk, older adult individual visits their primary care provider at their community's FQHC service location. Recently, the individual has been gaining weight and experiencing increased anxiety, and their visit also identifies that they have unusually high blood pressure results compared to previous encounters. Upon administering their organization's social risk screening tool, the provider observes that the individual also lacks access to the necessary food resources due to having recently lost their driver's license. As a result, the individual's traditional means of routinely visiting the grocery store to obtain nutritious meals has been removed. One of the provider's actions is to refer the individual to a local area agency on aging that operates its community's Meals on Wheels service, which delivers a set of freshly prepared and ready-to-eat meals to homebound, older-adult clients on a weekly basis. However, because the individual is at increased risk for severe illness as a result of several underlying health conditions, they often need to be hospitalized for short periods of time. To prevent food waste, the Meals on Wheels service preemptively signs up for HealthInfoNet's real-time event notifications to receive alerts when the individual is admitted to and discharged from inpatient or emergency department settings. As soon as the individual is admitted to the hospital, the Meals on Wheels service is notified, at which point it chooses to pause further food delivery services. Then, once the individual is safely discharged from the hospital back to their home, the Meals on Wheels service is again notified, at which point it immediately resumes its services so that the individual can have a meal waiting for them at home.

Table 19. Housing Stability & Quality Services Case Study

Housing Stability & Quality
Homelessness – Individuals who are lacking housing, including the use of shelters, transitional housing, and other day-to-day paid options (e.g., motels, hotels, etc.), or who are living with others temporarily or on the street⁶. Housing Insecurity – Individuals who are at risk of losing their homes due to the inability to consistently afford payments⁶. Housing Inadequacy – Individuals who are living in housing of poor quality and/or condition⁶.
Data Element(s)/Value Set(s)
UDS Reporting:⁵¹ Appendix D, Question 12a: Please provide the total number of patients that screened positive for the following at any point during the calendar year. <i>Option = Housing Insecurity</i> PRAPARE Measure:⁶ Question 7: What is your housing situation today? <i>Response = I do not have housing (staying with others, in a hotel, in a shelter, living outside on the street, on a bench, in a car, or in a park).</i>
Health Information Service
Medicaid Analytics Platform
Example Use Case
Care managers within the Office of MaineCare Services' Emergency Department Collaborative log in to HealthInfoNet's Medicaid Analytics Platform each morning and afternoon to review both aggregate- and member-level analyses of active Medicaid members' healthcare outcomes and predicted health risks. The platform's reporting combines clinical data from the statewide HIE with daily eligibility and monthly claims data received directly from MaineCare for its member population. As one of their primary workflows within the system, the care managers identify members with emergent (i.e., unavoidable or necessary) and/or non-emergent (i.e., potentially avoidable or unnecessary) inpatient and/or emergency department utilization for follow-on preventive action. Using the data available from FQHCs' social risk screening tools regarding individuals' homelessness statuses, the care managers are able to stratify analyses to specifically identify non-emergent emergency department encounters had by homeless members. In doing so, the care managers begin to better understand the many obstacles experienced by these members in using primary care services to seek necessary care. As a result, they can curate and make available relevant and more actionable resources and interventions to these members, including referrals to MaineHousing⁵² in an effort to improve the members' access to healthcare services by offering them affordable, stable housing.

Table 20. Transportation Access Services Case Study

Transportation Access
Individuals' abilities to get to and from work, access healthy food options, visit healthcare providers, and generally travel to and from appointments and other locations critical to daily living ⁶ .
Data Element(s)/Value Set(s)
UDS Reporting:⁵¹ Appendix D, Question 12a: Please provide the total number of patients that screened positive for the following at any point during the calendar year. <i>Option = Lack of Transportation/Access to Public Transportation.</i> PRAPARE Measure:⁶ Question 15: Has lack of transportation kept you from medical appointments, meetings, work, or from getting things needed for daily living? <i>Response(s) = Yes, it has kept me from medical appointments or from getting my medications <u>OR</u> Yes, it has kept me from non-medical meetings, appointments, work, or from getting that that I need.</i>
Health Information Service
Electronic Health Record Systems
Example Use Case
In preparing for their upcoming week's visits, a healthcare provider opens HealthInfoNet's electronic health record system to review their patients' longitudinal health records. In their review, the provider observes that one of their patient's chronic social risk factors is a lack of adequate transportation options to medical-related appointments. In fact, from auditing the patient's appointment history within their EHR, the provider notes that the individual has had to consistently reschedule to different dates/times due to changes in local bus schedules. And, just after the individual's last rescheduled appointment, they experienced an observational inpatient stay at the hospital which may have potentially been avoided had they been able to keep their original primary care appointment. With a hunch that the same factors prohibiting the individual's ability to meet previous appointments may impact their upcoming visit, the provider calls the individual in advance and provides them with an option for a home health service in lieu of their on-site visit. With the burden and anxiety of sorting out transportation options resolved, the individual gladly accepts the offer and is able to connect with their new home health provider at the original date/time.

Conclusion

There is much left to be done in the domain of social health data strategies. For HealthInfoNet, and other peers approaching the field from a technological perspective, overcoming its challenges are seen akin to how today's HIE model currently supports medical care workflows by connecting disparate EHR systems to share clinical data among diverse stakeholders. If the outputs from social risk screening tools can be exchanged and compiled in a comparable method, with underlying terminology standardization processes in place, then a CHIE model is technically feasible. And with it, the sky is the limit as far as the types of services that a CHIE can provide to its stakeholders, whether it's the inclusion of a universal social risk screening tool, a closed-loop referral management function, event-based clinical and community notifications, or other such cross-sector services that stakeholders deem valuable. However, there are three key factors prohibiting the wide scale adoption of such a CHIE model within and across systems of care that should be carefully considered.

First and foremost, the recommendations provided in this report begin with a few decisive assumptions regarding the collection and exchange of social health information, namely that the various social risk factor data elements and their respective value sets are stored and shared using discrete methods. If FQHCs are unable to accomplish this precursory requirement then subsequent recommendations immediately become less relevant and meaningful. Steps taken by Nason Health Care in their successful collection and exchange of information with the statewide HIE may be worth examining more closely as a potential standard that peer FQHCs could pursue in the future.

Second, the recommendations provided in this report do not touch on the governance structure required to evolve Maine's existing HIE into a full-fledge CHIE model. Enabling the exchange of sensitive, potentially stigmatic social risk factor information with the statewide HIE for expansive cross-sector use (i.e., beyond the HIE's authorized use cases) calls for a deeper dive into the related complexities of privacy and confidentiality laws on consent management and information sharing protocols. To ensure that the CHIE helps the communities it is intended to serve, buy-in of its strategic vision through the creation of a data-sharing legal governance framework is needed. In Maine, the Maine Council on Aging's "Municipal Data Across Sectors for Healthy Aging" project and the Maine Medical Association Center for Quality Improvement's "Community Information Exchange Workgroup" initiative, each effort aimed at better understanding what it entails to obtain stakeholder consensus to cross-sector data-sharing practices, may provide helpful guidance for future expansion efforts.

And third, an overarching risk to the continued planning and eventual implementation of the recommendations and activities described in this report is funding. In order for FQHCs to be successful in the various strategic, technical, and operational social health data strategies that have been carefully considered in this report, external financial assistance is required. In addition to various grant opportunities that may be possible through learning networks such as the Robert Wood Johnson Foundation's DASH collaborative and the [All In: Data for Community Health](#) initiative, the MPCA's role as Maine's HCCN facilitator may offer future funding opportunities to advance this project's vision to enhance patient and provider care experiences, technical interoperability, and operational and clinical practices through the use of data.

This project, and the recommendations provided herein, are a result of the state of Maine's progressive history of collaboration in pioneering novel ways to improve the delivery of care to individuals from diverse communities and with diverse needs. This report seeks to support what is only the initial phase of social health data innovation in the state, and hopes to become a foundation from which other like-minded efforts can continue to learn, evolve, and adopt over time as more advanced solutions and insights become available in this body of work.

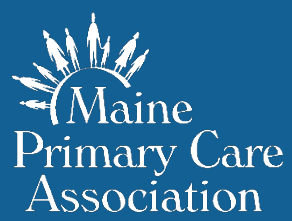
References

- 1 Institute for Healthcare Improvement. "The IHI Triple Aim." Institute for Healthcare Improvement. Accessed June 29, 2021. <http://www.ihl.org/Engage/Initiatives/TripleAim/Pages/default.aspx>.
- 2 World Health Organization. "Social Determinants of Health." World Health Organization. World Health Organization. Accessed June 15, 2021. https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1.
- 3 Alderwick, Hugh, and Laura M. Gottlieb. "Meanings and Misunderstandings: A Social Determinants of Health Lexicon for Health Care Systems: Milbank Quarterly." Milbank Memorial Fund, November 18, 2019. <https://www.milbank.org/quarterly/articles/meanings-and-misunderstandings-a-social-determinants-of-health-lexicon-for-health-care-systems/>.
- 4 HealthBegins. "From Public Charge to Voting: Five Ways Healthcare Leaders Are Helping Transform Structural Determinants of Health across America -." HealthBegins, June 16, 2021. <https://healthbegins.org/webinar-from-public-charge-to-voting-5-ways-healthcare-leaders-can-tackle-structural-determinants-of-health/>.
- 5 Kaiser Permanente. Risk Screening Tools Review. Accessed June 16, 2021. <https://sdh-tools-review.kp.washingtonresearch.org/>.
- 6 National Association of Community Health Centers, Association of Asian Pacific Community Health Organizations, Oregon Primary Care Association, and Institute for Alternative Futures. Rep. PRAPARE Implementation & Action Toolkit, March 2019. http://www.nachc.org/wp-content/uploads/2019/04/NACHC_PRAPARE_Full-Toolkit.pdf.
- 7 Robert Wood Johnson Foundation. "Medicaid's Role in Addressing Social Determinants of Health." Robert Wood Johnson Foundation, January 8, 2020. <https://www.rwjf.org/en/library/research/2019/02/medicaid-s-role-in-addressing-social-determinants-of-health.html>.
- 8 Turner-Musa, Jocelyn, Oluwatoyin Ajayi, and Layschel Kemp. "Examining Social Determinants of Health, Stigma, and COVID-19 Disparities." Healthcare (Basel, Switzerland). MDPI, June 12, 2021. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7349778/>.
- 9 Diderichsen F. Towards a theory of health equity. Unpublished manuscript, 1998
- 10 World Health Organization. "A Conceptual Framework for Action on the Social Determinants of Health." Debates, Policy, & Practice Case Studies. World Health Organization Commission on Social Determinants of Health, 2010. https://www.who.int/sdhconference/resources/ConceptualframeworkforactiononSDH_eng.pdf.
- 11 Williams, Corey. "Detroit Is an Employment Desert." Business Insider. Business Insider, March 2, 2015. <https://www.businessinsider.com/detroit-is-an-employment-desert-2015-3>.
- 12 National Alliance to Impact the Social Determinants of Health. "Identifying Social Risk & Needs in Health Care." NASDOH Social Risks Issue Brief. National Alliance to Impact the Social Determinants of Health, January 3, 2019. <https://www.nasdoh.org/wp-content/uploads/2019/01/NASDOH-Social-Risks-Issue-Brief.pdf>.
- 13 National Association of Community Health Centers. "About the PRAPARE Assessment Tool." National Association of Community Health Centers, February 1, 2021. <https://www.nachc.org/research-and-data/prapare/about-the-prapare-assessment-tool/>.
- 14 Centers for Medicaid and Medicare Services. "Accountable Health Communities Model: CMS Innovation Center." CMS Innovation Center, 2021. <https://innovation.cms.gov/innovation-models/ahcm>.
- 15 Kaiser Permanente. "Tools & Resources: SONNET - A Social Needs Network for Evaluation and Translation." SONNET, 2021. <https://sonnet.kaiserpermanente.org/toolkit.html>.

- 16 Kaiser Permanente Northwest. "CIN Case Study: Kaiser Permanente Northwest." California Health Care Foundation, July 24, 2020. <https://www.chcf.org/draft-cin-case-study-kaiser-permanente-northwest/>.
- 17 National Association of Community Health Centers. (2016, September 0). PRAPARE Assessment: Paper Version (September 2, 2016). PRAPARE Paper Version. https://www.nachc.org/wp-content/uploads/2018/05/PRAPARE_One_Pager_Sept_2016.pdf.
- 18 CMS. (2019). The Accountable Health Communities Health-Related Social Needs Screening Tool. AHC Screening Tool Explanation. <https://innovation.cms.gov/files/worksheets/ahcm-screeningtool.pdf>.
- 19 Kaiser Permanente. (2016, November 10). Your Current Life Situation. Your Current Life Situation Questionnaire. <https://sirennetwork.ucsf.edu/sites/default/files/Your%20Current%20Life%20Situation%20Questionnaire%20v2-0%20%28Core%20and%20supplemental%29%20no%20highlights.pdf>.
- 20 Social Interventions Research and Evaluation Network. "Improving Research on Social and Medical Care Integration." SIREN, May 25, 2021. <https://sirennetwork.ucsf.edu/>.
- 21 The Gravity Project. "The Gravity Project Confluence Articles." The Gravity Project - Confluence, 2021. <https://confluence.hl7.org/display/GRAV/The+Gravity+Project>.
- 22 The Gravity Project. (2021). The Gravity Project Educational and Instructional Materials. <https://confluence.hl7.org/display/GRAV/Educational+and+Instructional+Materials>.
- 23 Logical Observation Identifiers Names and Codes. "Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences [PRAPARE]." Logical Observation Identifiers Names and Codes (LOINC), 2021. <https://loinc.org/93025-5/>.
- 24 ICD 10 Data. (2021). 2021 ICD-10-CM Diagnosis Code Z59.4. <https://www.icd10data.com/ICD10CM/Codes/Z00-Z99/Z55-Z65/Z59-/Z59.4>.
- 25 The Gravity Project. (2021). The Gravity Project Food Insecurity. <https://confluence.hl7.org/display/GRAV/Food+Insecurity>.
- 26 USDA. (2020, September 9). Food Security Status of U.S. Households in 2019: Key Statistics & Graphics. USDA ERS - Key Statistics & Graphics. [https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/key-statistics-graphics.aspx#:~:text=10.5%20percent%20\(13.7%20million\)%20of,from%2011.1%20percent%20in%202018](https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/key-statistics-graphics.aspx#:~:text=10.5%20percent%20(13.7%20million)%20of,from%2011.1%20percent%20in%202018).
- 27 Holben DH, Pheley AM. Diabetes risk and obesity in food-insecure households in rural Appalachian Ohio [Internet]. Prev Chronic Dis. 2006[cited 2017 Nov 27];3(3). Available from: http://www.cdc.gov/pcd/issues/2006/jul/05_0127.htm
- 28 Feeding America. (2019, August 12). The Healthcare Costs of Food Insecurity. <https://public.tableau.com/app/profile/feeding.america.research/viz/TheHealthcareCostsofFoodInsecurity/HealthcareCosts>.
- 29 Taylor, L. (2018, June 7). Housing And Health: An Overview Of The Literature: Health Affairs Brief. Health Affairs. <https://www.healthaffairs.org/doi/10.1377/hpb20180313.396577/full/>.
- 30 Center for Outcomes Research and Education, Enterprise Community Partners, Inc., & Meyer Memorial Trust. (2016). Health in Housing: Exploring the Intersection between Housing and Health Care. <https://www.enterprisecommunity.org/download?fid=5703&nid=4247>.
- 31 Syed, S. T., Gerber, B. S., & Sharp, L. K. (2013, October). Traveling towards disease: transportation barriers to health care access. Journal of Community Health. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4265215/>.
- 32 The Gravity Project. "The Gravity Project USCDI Submission." The Gravity Project - Confluence, 2021. <https://confluence.hl7.org/display/GRAV/The+Gravity+Project>.

- 33 Office of the National Coordinator for Health Information Technology. "Social Determinants of Health." Interoperability Standards Advisory, 2021. <https://www.healthit.gov/isa/uscdi-data/social-determinants-health?created=All&page=1>.
- 34 Office of the National Coordinator for Health Information Technology. "United States Core Data for Interoperability (USCDI)." United States Core Data for Interoperability (USCDI) | Interoperability Standards Advisory (ISA), 2021. <https://www.healthit.gov/isa/united-states-core-data-interoperability-uscdi>.
- 35 Office of the National Coordinator for Health Information Technology. "ONC's Cures Act Final Rule, 2021." <https://www.healthit.gov/curesrule/>.
- 36 Office of the National Coordinator for Health Information Technology. (2021, July 9). United States Core Data for Interoperability, Version 2 (July 2021). <https://www.healthit.gov/isa/sites/isa/files/2021-07/USCDI-Version-2-July-2021-Final.pdf>.
- 37 Office of the National Coordinator for Health Information Technology. (2021, July 9). HHS Updates Interoperability Standards to Support the Electronic Exchange of Sexual Orientation, Gender Identity and Social Determinants of Health. <https://www.hhs.gov/about/news/2021/07/09/hhs-updates-interoperability-standards-to-support-electronic-exchange-of-sogi-sdoh.html>.
- 38 Office of The Assistant Secretary for Planning and Evaluation. "Information for Health: A Strategy for Building the National Health Information Infrastructure." Information For Health: A Strategy For Building The National Health Information Infrastructure, February 21, 2017. <https://aspe.hhs.gov/report/information-health-strategy-building-national-health-information-infrastructure>.
- 39 HHS Office of the Secretary, and Office for Civil Rights. "HITECH Act Enforcement Interim Final Rule." US Department of Health and Human Services, June 16, 2017. <https://www.hhs.gov/hipaa/for-professionals/special-topics/hitech-act-enforcement-interim-final-rule/index.html>.
- 40 Office of the National Coordinator for Health Information Technology. "Health Information Exchange." Health IT and Health Information Exchange, October 16, 2019. <https://www.healthit.gov/topic/health-it-and-health-information-exchange-basics/health-information-exchange>.
- 41 Strategic Health Information Exchange Collaborative. "Strategic Health Information Exchange Collaborative (SHIEC)." Strategic Health Information Exchange Collaborative, 2021. <https://strategichie.com/>.
- 42 Alderwick, Hugh, and Laura M Gottlieb. "Meanings and Misunderstandings: A Social Determinants of Health Lexicon for Health Care Systems." The Milbank Quarterly. John Wiley and Sons Inc., June 2019. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6554506/>.
- 43 Healthcare Innovation. "HIEs Increasingly Connecting With Community, Social Service Organizations, Survey Finds." Healthcare Innovation. Accessed June 24, 2021. <https://www.hcinnovationgroup.com/interoperability-hie/health-information-exchange-hie/news/21123356/hies-increasingly-connecting-with-community-social-service-organizations-survey-finds>.
- 44 Johnson, Beth, Karis Grounds, and Camey Christenson. "CIE Toolkit In Depth." Community Information Exchange. San Diego 211, December 20, 2018. http://ciesandiego.org/wp-content/uploads/2018/12/CIEWeb1_FINAL.pdf.
- 45 SNOMED. (2021). SNOMED CT January 2021 International Edition - SNOMED International Release notes - SNOMED International Release Management. SNOMED Version Release Notes. <https://confluence.ihtsdotools.org/display/RMT/SNOMED+CT+January+2021+International+Edition+-+SNOMED+International+Release+notes>.
- 46 Find a Code. (2021). 306206005 - Referral to service - SNOMED CT. <https://www.findacode.com/snomed/306206005--referral-to-service.html>.
- 47 San Diego 211. "What Is CIE?" CIE San Diego. San Diego 211, 2021. <https://ciesandiego.org/what-is-cie/>.

- 48 Maine Legislature. Title 22, §1711-C: Confidentiality of health care information. Maine Legislature, November 25, 2020. <https://legislature.maine.gov/statutes/22/title22sec1711-C.html>.
- 49 Health Resources & Services Administration. "Maine Health Center Controlled Networks Awards 2019." Bureau of Primary Health Care, July 21, 2019. <https://bphc.hrsa.gov/program-opportunities/funding-opportunities/hccn/awards/me>.
- 50 Maine Primary Care Association. "Community Health Centers." Maine Primary Care Association, July 7, 2020. <https://mepca.org/community-health-centers/>.
- 51 Health Resources & Services Administration. "Uniform Data System: 2021 Health Center Data Reporting Requirements." 2021 UDS Manual. Health Resources & Services Administration, 2021. <https://bphc.hrsa.gov/sites/default/files/bphc/datareporting/pdf/2021-uds-manual.pdf>.
- 52 Maine Housing. Maine Gets Federal Support to Address Homelessness Among MaineCare Members, April 18, 2019. <https://mainehousing.org/news/news-detail/2019/04/18/maine-gets-federal-support-to-address-homelessness-among-mainecare-members>.



© 2021 HealthInfoNet and Maine Primary Care Association (MPCA).
All Rights Reserved. For questions, please contact HealthInfoNet's
Communications team via email at general@hinfonet.org.