State of Vermont

Social Determinants of Health (SDOH) Data Governance and Consent Management

SDOH Data Governance Plan

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Introduction

Vermont's Unified Health Data Space (UHDS) is being developed to support both public health and Medicaid health plan operations, as well as Medicaid-driven delivery system reform, healthcare delivery and coordination, and other population health management activities. To enable these outcomes, Vermont will host a variety of data types within its centrally located health record, including clinical, claims, mental health, substance use, and social determinants of health (SDOH). UHDS has an existing data governance framework.[1] This SDOH Data Governance Plan fits within that existing framework.

Individual-level SDOH data is collected and maintained by many different sources. This data is subject to various protections related to its use. The organizations that manage this data may be willing to share it if they can see protections are in place to ensure requirements for privacy and security are being enforced and that the data is understood and properly used.

Data governance establishes a plan for developing, managing, and clearly communicating policies that guide the use of data. It sets formal standards and procedures for managing and protecting information. This helps to enable a thorough understanding of data and its appropriate application by stakeholders across different settings.

This SDOH Data Governance Plan is scoped to include data from the Agency of Human Services (AHS) only. The day will come when AHS seeks to incorporate SDOH data from other sources. At that time, this plan can be re-evaluated to increase the scope of data related to SDOH data governance.

The overall purpose of this document is as follows:

- Define SDOH
- Clearly establish the need for SDOH data
- Clarify the vision of SDOH data use
- Define the governance plan needed to facilitate acquisition, management, and use of SDOH data across departments in AHS

SDOH Defined

The U.S. Department of Health and Human Services (HHS) defines SDOH as "the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks."[2] Also known as health-related social needs, these determinants include a wide range of factors, such as economic stability, education, housing, food security, social support networks, availability of health care, and the quality of the physical environment in which people live.

The Centers for Medicare & Medicaid Services (CMS) developed the Health-Related Social Needs (HRSN) Screening Tool, which defines and organizes SDOH needs using core and supplemental domains.[3] These are described in the sections that follow.

[1] https://healthdata.vermont.gov/sites/healthdata/files/documents/VUHDSGovernanceFramework_09302022.pdf
[2] https://health.gov/healthypeople/priority-areas/social-determinants-health
[3] https://www.cms.gov/priorities/innovation/files/worksheets/ahcm-screeningtool.pdf

Core Screening Domains

CMS lists the following five HRSNs as "core needs," or **required** elements, of the screening questionnaire:

- **Housing Instability** – Includes concerns around paying rent, a high frequency of moving, an overcrowded home, or using a large portion of the household income to pay for housing
- **Food Insecurity** – Includes not having enough food to eat or trouble affording food, issues accessing grocery stores to purchase food, or not knowing where the next meal will come from
- **Transportation** – Includes difficulties traveling from place to place in a reliable, safe, and timely manner for daily living
- **Utilities** – Includes concerns about being able to pay utility (gas, water, power) bills
- **Safety** – Includes concerns related to personal safety, mental or physical, in one's home or in the company of someone (or multiple people) in their household or otherwise

Supplemental Screening Domains

CMS lists the following eight HRSNs as "supplemental needs," or **optional** elements, which can be included in the screening questionnaire:

- **Financial Strain** – Includes concerns about fulfilling personal financial obligations
- **Employment** – Includes the need for support in finding or keeping paid employment
- **Family and Community Support** – Includes a combination of a lack of social connection with family or others in the community and a need for support when performing daily activities, such as bathing, preparing meals, managing finances, etc.
- **Education** – Includes opportunities for career growth that affect economic resources and is directly related to healthcare access and engagement
- **Physical Activity** – Includes a lack of physical activity, such as walking, running, or other exercise
- **Substance Use** – Includes the use of select substances, such as alcohol, tobacco, illegal drugs, or other substances that could cause harm
- **Mental Health** – Includes a need to improve one's psychological or emotional well-being
- **Disabilities** – Includes serious physical, mental, or emotional conditions which hinder or prevent individuals from focusing, remembering, or performing certain activities

SDOH as a Health Priority

Research has demonstrated that up to 80 percent of health outcomes are driven by factors outside of the healthcare system.[4] The evidence that health and well-being is shaped not only within the walls of a clinic, but also by the broader social, economic, and environmental contexts has boosted SDOH into the spotlight of public health discourse.

For instance, the World Health Organization (WHO) has commissioned a "World Report" that will provide scientific evidence, knowledge, and best practices on SDOH, including impacts on health and health equity, the progress being made, and recommendations on future actions.[5] The Centers for Disease Control and Prevention (CDC) has started an agency-wide process to build and expand efforts to address SDOH.[6] Additionally, HHS has identified SDOH as one of the top three priorities in its Healthy People 2030 initiative.[7]

[4] https://www.ajpmonline.org/article/S0749-3797(15)00514-0/abstract
[5] https://www.who.int/initiatives/action-on-the-social-determinants-of-health-for-advancing-equity
[6] https://www.cdc.gov/about/sdoh/cdc-doing-sdoh.html
[7] https://health.gov/healthypeople

Policymakers, healthcare providers, community organizations, and researchers are also focused on incorporating SDOH insights. They are working to develop more comprehensive strategies designed not only to treat, but also prevent, illnesses by targeting underlying social causes. The success of these groups significantly depends on accessing the right data, for the right people, at the right time.

With the growing focus on SDOH, several publicly available tools have emerged. In addition to the CMS HRSN, the Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences (PRAPARE) tool is a national, standardized patient risk assessment tool that has been integrated into electronic health records (EHRs) by many community health centers.[8] Another example is the EveryONE Project™ by the American Academy of Family Physicians (AAFP), which screens for patient social needs and helps providers connect patients with supportive services in their neighborhood.[9] Many electronic health vendors and healthcare systems have also established their own instruments for recording SDOH.

With a growing understanding of the significant impact of SDOH on health outcomes, health systems, and health plans, state and federal programs are increasingly starting to integrate SDOH data. According to CMS, collecting SDOH data can improve equity in healthcare delivery and research through the following:

- Empowering providers to identify/address health disparities (e.g., care coordination and referrals)
- Supporting quality measurement
- Supporting planning and implementation of social needs interventions
- Identifying community and population needs
- Monitoring SDOH intervention effectiveness for patient outcomes
- Utilizing data to advocate for updating and creating new policies

Based on these benefits, governments and health organizations at various levels are using SDOH data to both demonstrate value for the populations they serve and make evidence-based recommendations to states and territories.

Challenges to Using SDOH Data

Traditionally, health and social services organizations have operated in silos. This has inhibited the ability to integrate and share data to provide a more comprehensive understanding of patients and the communities in which they live. Despite the variety of data sources that collect information related to SDOH and HRSN, there are significant challenges in accessing and integrating this data to provide an accurate (and actionable) picture of where services and supports are needed. A list of some of these barriers is as follows:

- **Standardization** – Similar information may be measured in different ways across screening tools.
- **Information Capture** – Across different sources, data may be recorded in different ways. For example, some instruments use standardized data fields (e.g., Z code for EHRs, numeric codes for PRAPARE, Logical Observation Identifiers Names and Codes [LOINC®] for CMS HRSN), while other data sources may capture this information as an open text field.
- **Reliability** – When pieces of data contradict each other, it becomes challenging to determine which source of information is the most reliable.
- **Validity** – It is important to make sure data is accurate. For example, if a patient has a surrogate filling out a screening tool for them (e.g., due to cognitive impairment, disabilities, or other reasons), it is possible that some of the information may be incorrect. This is especially problematic when trying to triangulate county or regional data that does not align with patient-level data.

[8] https://prapare.org/
[9] https://www.aafp.org/family-physician/patient-care/the-everyone-project.html

- **Missing Data** – When data is missing at the record level, decisions must be made about how to handle that condition prior to aggregating the data for business intelligence or research purposes. Fortunately, there are existing methods for handling missing data, including disregarding the data field entirely, calculating the value based on the average value for similar patients, or estimating the value based on responses to other data fields.
- **Information Record** – Even if data is captured in a standardized format, it may be recorded in different places within the medical record. For example, some EHRs have their own sections for capturing data on SDOH, which is different from where other practices code Z-scores. Some practices may assess patients' HRSN but not document this in the patient's electronic record.
- **Granularity** – SDOH data is sometimes available at the individual level, but at other times only in aggregated form (e.g., state, county, or ZIP Code). A data governance effort will need to determine sharing policies for all levels of granularity.
- **Out-of-Range Values** – Sometimes data falls outside of an expected range (e.g., patient is over 125 years old) and can impact analyses. There are strategies for handling out-of-range values, such as setting them as missing, calculating an average using a median rather than a mean, etc.
- **Timeliness** – A patient's circumstances can change frequently. For example, someone who has secure housing one week may lose their job and find themselves unable to pay their rent. It is important to consider the most recently available data but recognize that even data from a month ago may no longer provide a fully accurate picture of a patient's HRSN.

Data sharing and integration also create obstacles as many of the entities that may have access to information to inform SDOH (e.g., homeless shelters, soup kitchens) do not have the ability to electronically capture and transmit this information to the public health department. As a result, many community-based organizations (CBOs) cannot access information that would help them better plan and coordinate services. At the same time, information collected by these entities cannot be transmitted back to state or local governments to inform distribution and investment of limited resources.

Current State of SDOH in AHS

A review of the Vermont SDOH ecosystem was conducted and included publicly available materials on the AHS Web site, documents provided by the AHS team, and stakeholder interviews. In total, more than 20 individuals from the following organizations were interviewed:

- AHS, including Central Office, Office of Health Care Reform (HCR)
- Department of Vermont Health Access (DVHA)
- Vermont Department of Health (VDH)
- Vermont Department for Children and Families (DCF)
- Vermont Child Health Improvement Program (VCHIP)
- Vermont Technology Information Leaders (VITL)
- Vermont Department of Corrections (DOC)
- Vermont Office of the Health Care Advocate (HCA)
- OneCare Vermont
- Bi-State Primary Care Association (PCA)

These interviews revealed that SDOH data is already collected within AHS. Most stakeholders agreed that the sharing of SDOH data with the right people at the right time could lead to better health outcomes for Vermonters. Challenges experienced to-date were also identified, with a consensus that the technology from Vermont Health Information Exchange (VHIE), along with governance of SDOH data, will be critical to addressing existing challenges.

SDOH Data from AHS Departments

The previously mentioned review also revealed a robust set of potential sources of SDOH data captured by departments within AHS. Table 1 summarizes those sources and the departments that capture or utilize the data.

Table 1: SDOH Data Sources Within AHS Departments

Project, System, or Program	Mechanism	Description/Use
Department: DVHA		

Vermont Chronic Care Initiative (VCCI)[10]	General Assessment and New to Medicaid (NTM) screening	• Asks members questions about the following:
		  • Access to care (including primary and dental)
		  • Presence and status of health conditions
		  • Other needs that would assist them in maintaining and/or improving their health (e.g., housing, food, safety)
		• Used to assess health needs of people enrolled in Medicaid, including dually eligible members
		• Administered by case managers and nurses

Blueprint for Health – Increased Community Health Team (CHT) Capacity[11]	Mental health, substance use, HRSN screening tools	• CHTs local to each community support primary care providers through the following:
		  • Screen for mental health needs, substance use, and HRSN (e.g., intimate partner violence, food, housing insecurity)
		  • Assist with care coordination and patient navigation

Department: VDH		
Health Statistics and Vital Records	Vermont Household Health Insurance Survey (VHHIS)	• VDH "conducts periodic household surveys of Vermont residents to measure the uninsured rate and coverage sources for insured residents and collects information on relevant demographic, income, and employment characteristics"[12]
Community Partnerships for the Unhoused	Surveys and Vital Records systems	• Currently collecting individual-level SDOH data through the vital records system • Also uses population-based surveys to capture SDOH data
Department: DCF		
Pilot Program to Consolidate Screening Questions	Survey data from the General Assistance (GA) Emergency Housing Program (CommCare)	• Original data collected during the implementation of the GA Housing Program • Attempted to determine the best question set to capture needs to support processes across departments
Economic Services Division	Reach Up and 3SquaresVT	• Sources have household need data over time
Family Services Division	FSDNet/Social Services Management Information System (SSMIS)	• Provides foster care case management data
Department: Disabilities, Aging and Independent Living (DAIL)		
Designated Agencies (DAs)	Various (case management and direct service interventions)	• Responsible for ensuring needed services are available through local planning, service coordination, and monitoring outcomes within their region for the aging populations
Specialized Service Agencies (SSAs)	Various (case management and direct service interventions)	• Provide developmental disabilities services through either a distinct service delivery or service coordination

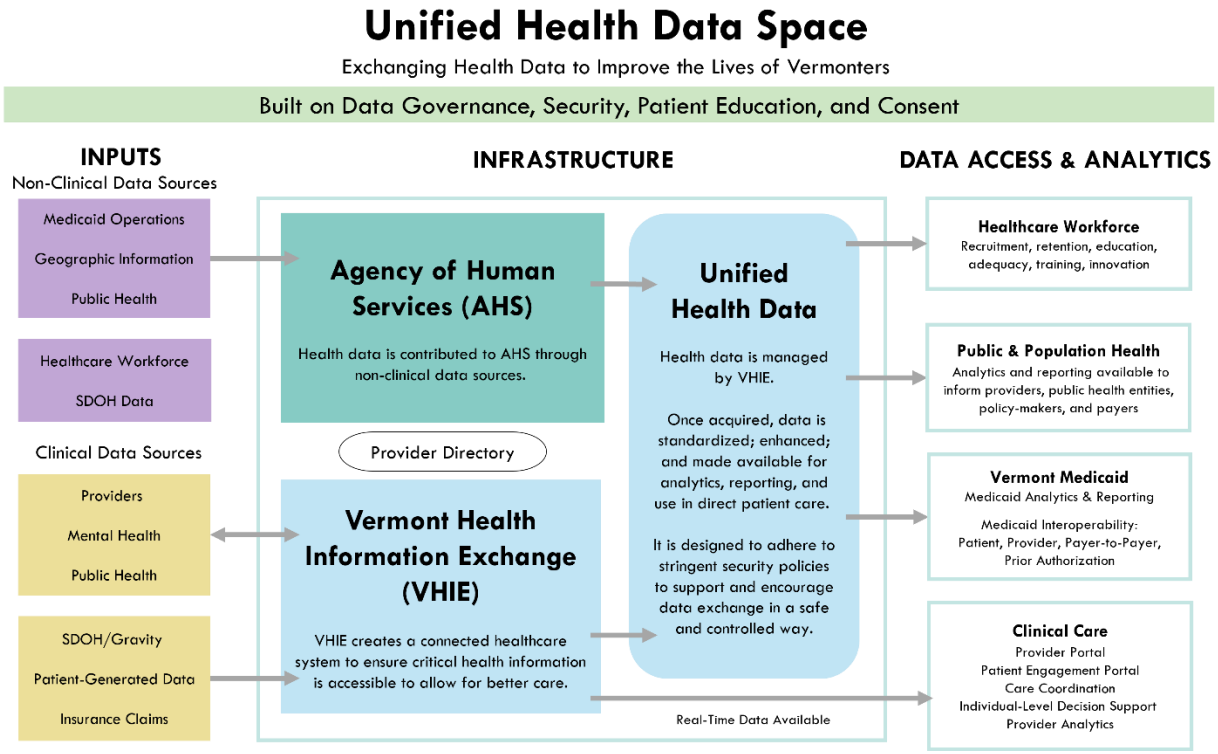
[10] https://dvha.vermont.gov/providers/vermont-chronic-care-initiative
[11] https://blueprintforhealth.vermont.gov/expansion
[12] https://www.healthvermont.gov/stats/population-health-surveys-data/household-health-insurance-survey

Project, System, or Program	Mechanism	Description/Use
Department: DOC		
Various	Various	• Varying levels of detail data on the following limited populations: • Inadequate housing • Partner violence • Elder abuse • Employment status • Educational attainment • Veteran status • Stress • Social connection
Risk-Based Assessment	Offender Management System (OMS)	• Currently collecting risk assessment surveys with SDOH and interventions data
Department: Various Within AHS		
Integrated Eligibility (IE)	Various	• Data on the following: • Medicaid (long-term care and qualified health plans) • Supplemental Nutrition Assistance Program (SNAP) • Temporary Assistance for Needy Families (TANF) • General and emergency assistance

Vermont Health Information Exchange and SDOH

Vermont is in the process of building the UHDS, which will house data from several sources, including clinical, Medicaid claims, SDOH, public health, and patient-generated data. The visual roadmap in Figure 1 illustrates the breadth of data types that are planned for incorporation into VHIE.

Figure 1: UHDS



VITL is the 501(c)(3) organization legislatively designated to manage and operate VHIE. The organization is dedicated to helping healthcare providers adopt and use health information technology (IT) to improve patient care. In its 2023 Annual Report, VITL states that it will work with AHS "to create opportunities to integrate new data types" into VHIE, focusing in the near-term on developing "a strategy to integrate SDOH data."[13] This objective highlights the commitment made by VITL to support the expanded use of SDOH data in Vermont.

Need for SDOH Data Governance

Stakeholder interviews sought to gather input on the vision, challenges, and current activities each is undertaking in relation to SDOH data. Stakeholder groups expressed specific interest in the following:

- Enhancing data systems
- Fostering transparency
- Ensuring legal compliance
- Providing education to facilitate the management and sharing of health data

The following points summarize the specific operational challenges articulated throughout the stakeholder interview process:

- **Measurement** – The ability to define, track, and measure interventions and outcomes is a prominent challenge. Interviewees highlighted a need for more effective tools and systems to address these gaps.
- **Z Codes** – The current format of SDOH data from clinical sources is "locked" within unstructured provider notes. Unlocking this wealth of data requires use of technologies that can parse and extract meaningful insights from unstructured sources. While potential solutions, such as Z codes, exist and hold promise for capturing SDOH data, their use is currently limited.[14]
- **Data Collection Burden** – The additional administrative burden related to SDOH data on healthcare providers is twofold. First, interviewees described the challenges associated with tracking SDOH data. Second, providers find it difficult to adapt to changes in how the information is assessed. These concerns emphasize the necessity for streamlined and user-friendly data collection processes that seamlessly integrate with existing workflows and technology.
- **Patient Consent** – Another complex issue stems from the need to educate patients regarding the importance of collecting SDOH data and documenting their consent to share this information. This requires a shared understanding and collaborative problem-solving effort among various stakeholder groups. This highlights the importance of fostering a comprehensive, inclusive dialogue and guidance to navigate the complexities of data sharing in the context of SDOH.
- **Data Comprehensiveness** – Currently, SDOH data is incomplete across the continuum of services and engagement. Data silos contribute to challenges in understanding individuals' social determinants, limiting the effectiveness of interventions. Bridging this gap requires a concerted effort to establish standardized data collection practices and ensure comprehensive coverage.
- **Data Analysis** – Because of the existing siloed nature of SDOH data, it is difficult to analyze. This challenge echoes the broader need to make SDOH data actionable. Overcoming this hurdle necessitates investment in analytical tools, data science capabilities, and collaboration between healthcare providers, researchers, and technology experts.

Effective data governance and strategy will enable AHS to align activities to priorities and begin to address these challenges.

[13] https://vitl.net/wp-content/uploads/2024/01/VITL-2023-Annual-Report.pdf
[14] https://www.cms.gov/files/document/cms-2023-omh-z-code-resource.pdf

SDOH Data Governance

Data governance provides the structure and processes needed for decision-making. It clearly identifies the roles and responsibilities of those who take part in those processes and how they should collaborate. Simply put, it is a structured means of collaboration to ensure the value and use of data is maximized while also safeguarding its quality and security.

As defined by the Data Governance Institute:

> Data governance is a system of decision rights and accountabilities for information-related processes, executed according to agreed-upon models which describe who can take what actions with what information, and when, under what circumstances, using what methods.[15]

Data governance should not be confused with data management. Data governance describes the development of policies and procedures (i.e., the rules for handling data within an organization) while data management is the actual implementation and enforcement of those policies and procedures (e.g., use of technologies, day-to-day operations, and processes).

To establish effective governance, gaining alignment, support, and participation from all levels of the Agency is imperative. The initial step involves aligning AHS through the development of a vision, mission, and principles that will steer SDOH data governance initiatives. This process includes setting goals and objectives that synchronize with ongoing IT, policy, and programmatic efforts already receiving departmental, agency-wide, and stakeholder focus.

Building on this foundation, SDOH governance is implemented based the following two critical components:

- **Organizational Scope and Structure** – This defines the goals, objectives, and overall purpose of the governance effort. It outlines boundaries within which to operate, the organizational structure that should be established with the necessary authority, and the roles needed to provide accountability.
- **Domain Operations** – This defines the data governance and decision-making processes and authority for each group. It provides the immediate steps needed to establish the program, along with short-, mid-, and long-term roadmap milestones.

Vision for the Use of SDOH Data

The vision for the use of SDOH data is a future where this data bridges the gap between healthcare and community needs, leading to equitable health outcomes. AHS is committed to establishing policies and procedures for the sharing and use of SDOH data through a data governance initiative that aligns with the Agency's overarching vision.

Mission for the Use of SDOH Data

The mission for the use of SDOH data is to promote initiatives that systematically address social needs through collaborative partnerships, data-guided solutions, and a commitment to equity and accessibility. Success will be a community where agencies and partners work together, guided by data, to create an environment conducive to health and well-being for all.

[15] https://datagovernance.com/the-data-governance-basics/definitions-of-data-governance/

Guiding Principles for the Use of SDOH Data

The State's aim is to integrate SDOH within AHS, with an overarching goal of enhancing health equity, outcomes, and overall well-being for all Vermonters. The following data governance principles support this initiative:

- **Holistic Health Integration** – Commit to integrating SDOH in all aspects of the Agency, ensuring a focus on person-centered, economic, educational, community, healthcare access, and environmental needs, with a strong emphasis on privacy and security
- **Risk Identification** – Employ analytics to identify risks and develop targeted interventions by using data to enhance population health management at both individual and community levels
- **Impactful SDOH Interventions** – Regularly assess the effectiveness of SDOH interventions, ensuring that services and programs are responsive and beneficial to the targeted populations
- **Collaborative Decision-Making** – Foster an environment where individuals are active participants in selecting suitable SDOH interventions, emphasizing personalized care and informed choices
- **Organizational Commitment to SDOH** – Establish strong leadership and dedicated teams that reflect an organizational commitment to addressing SDOH
- **Comprehensive SDOH Assessments** – Utilize a variety of methods, including patient-reported data and standardized assessments, to comprehensively evaluate SDOH for individuals
- **Inclusive Communication** – Ensure open, effective communication among all stakeholders, including providers and community organizations, to create a cohesive approach to addressing SDOH
- **Health Equity and Literacy** – Strive to eliminate health disparities and achieve health equity, emphasizing the importance of health literacy in empowering individuals and communities
- **Shared Responsibility and Collaboration** – Promote shared responsibility and collaboration across state and community sectors, including public, private, and not-for-profit, in working towards health and well-being

Goals and Objectives for the Use of SDOH Data

In the ideal future state, SDOH data will be captured in a consistent electronic format. No matter where an individual enters the Vermont social service or healthcare system, data will be easy to access and trace. Information will flow to and from a central hub that will consolidate the data from various sources, allowing information to be combined for proper use. Controls will be implemented to ensure the security and privacy of data that cannot be shared, while permitting eligible information to be accessed by relevant parties with an appropriate level of detail. SDOH information will be used to proactively identify populations where programmatic changes can be implemented to improve health equity in Vermont.

The following goals and themes emerged from analysis of the stakeholder interviews:

- **Language** – Establish a common language or method to capture, transmit, store, and access SDOH data throughout the state.
- **Alignment** – Develop and maintain strategic partnerships with federal and state agencies and appropriate community partners to support health equity priorities/initiatives throughout Vermont.
- **Measurement** – Discover, define, and monitor quantifiable measures that reflect progress toward achieving health equity.
- **Data Use and Access** – Promote the expanded use of data while ensuring appropriate controls are in place to manage its access.

SDOH Domain Governance Structure

Establishing the structure of SDOH data governance is a critical initial step. This ensures groups at both the leadership and implementation levels have the authority to make collective decisions about the information assets and understand their roles within broader AHS efforts. The organizational structure includes the groups and individuals involved in data governance and the relationships among them.

Governing by Domain

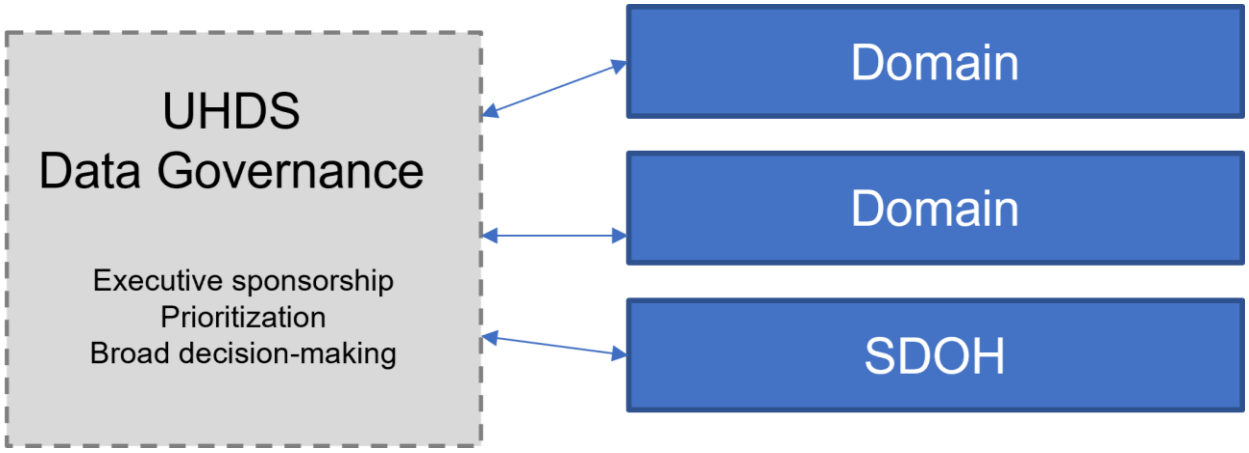
AHS established the UHDS Data Governance Framework to provide the governance model by which health data is stewarded, as well as details behind why, when, and how data may flow through UHDS. Integral to this framework is defining data domains, which establish boundaries around information ownership and responsibilities for maintenance. Data domains are used to identify, categorize, and group data based on logical subject areas. As a result, data domains often extend beyond a single business unit and system. Data domain participants are typically derived from the operations or functions within an organization and the data used to support those functions.

In domain-centric governance structures, data is governed by the group of people who manage the data collection and operations of the business functions contributing to the domain. Each domain is, therefore, responsible for maintaining the quality of its information. This is done with the understanding that the domain's data could then be consumed by other domains within the organization, with the appropriate level of consent, aggregation, and security.

SDOH is a data domain within the UHDS Data Governance Framework. Though there may be various types of SDOH data and systems used across AHS, governing by domain allows for common, functional meaning and definition. The UHDS Data Governance Council oversees how data from these domains is integrated, accessed, and shared though UHDS. Each domain, including SDOH, stands alone and has its own governance structure.

Figure 2 shows the SDOH domain as one of three separate domains that contribute data to UHDS.

Figure 2: UHDS Data Governance with SDOH Domain



SDOH Subdomains

Several subdomains of data exist within the overarching SDOH domain. National health organizations categorize these subdomains in a variety of ways. Table 2 shows SDOH subdomains as outlined by HHS's Healthy People 2030 initiative and the CMS HRSN Screening Tool.

Table 2: Potential SDOH Subdomains

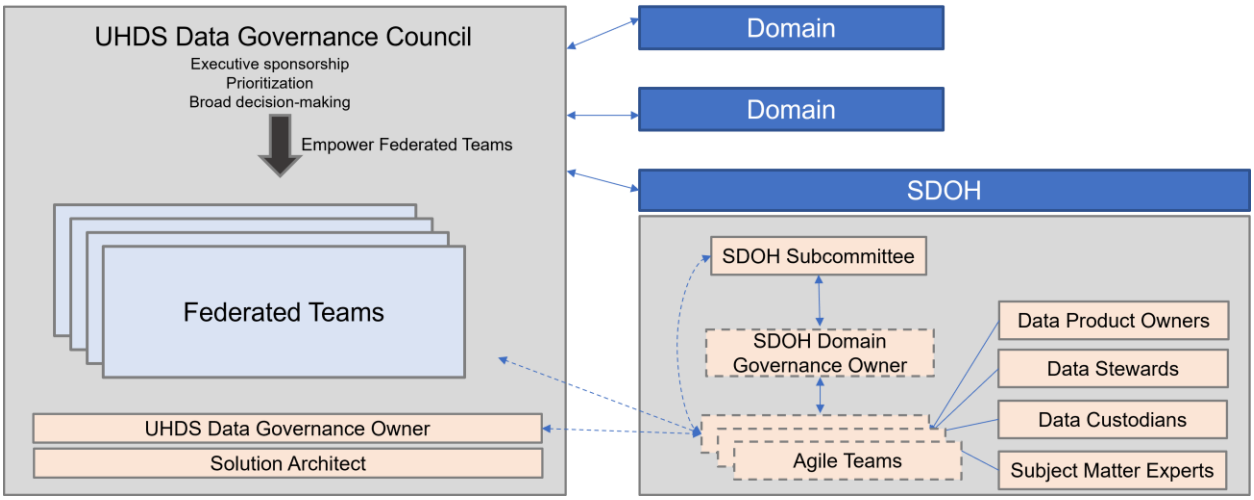
National Health Organization	SDOH Subdomains
HHS Healthy People 2030[16]	• Economic Stability • Education and Access Quality • Healthcare Access and Quality • Neighborhood and Built Environment • Social and Community Context
CMS HRSN Screening Tool	• Housing Instability • Food Insecurity • Transportation • Utilities • Safety • Financial Strain • Employment • Education • Physical Activity • Substance Use • Family and Community Support • Mental Health • Disabilities

Subdomains offer deeper context to help AHS set SDOH goals. This approach also creates a connection between goals and data that allows for baseline assessments and ongoing measurement of the effectiveness of interventions.

Organizational Structure

The UHDS Governance Framework established a hybrid governance model that includes a centralized governing body and federated domain teams. The central governing body, known as the UHDS Data Governance Council, is tasked with managing the UHDS data distribution hub and the integration and distribution of domain-specific data. The Council enables federated domain teams to lead strategic efforts across different domains, including SDOH. The SDOH domain is strategically governed by the SDOH Domain Governance Subcommittee. Figure 3 summarizes the structure and roles to govern SDOH data.

Figure 3: SDOH Governance Structure



[16] https://health.gov/healthypeople/priority-areas/social-determinants-health

SDOH Domain Governance Subcommittee

The SDOH Domain Governance Subcommittee (SDOH Subcommittee) provides executive sponsorship, sets goals, prioritizes work, and is responsible for broad decision-making for the domain. Membership within the SDOH Subcommittee includes responsible parties who own the data. The SDOH Subcommittee acts as an internal authority over how the data is defined, organized, integrated, managed, and used throughout AHS.

The responsibilities of the SDOH Subcommittee are as follows:

- Form agile teams and assign the SDOH Domain Governance Owner to support the execution and operations of data governance for the SDOH domain
- Monitor program effectiveness by tracking the status of governance activities and initiatives
- Set priorities for the governance program by developing and/or evaluating use cases or outcomes for the benefit of Vermonters
- Recommend, advise, and approve policies
- Provide executive sponsorship, including, but not limited to, funding support, communications, and serving as an escalation point for the agile teams
- Encourage SDOH data uses and data governance across the agency

Membership

The SDOH Subcommittee includes representatives from each business area contributing data to the SDOH data domain. Members should have operational and policy authority to support the development and implementation of any new or changing policies and processes. Members must fully represent the interest of their domain. In some cases, achieving the goals for SDOH governance requires multiple member positions per subdomain as subdomains may span across departments or organizational groups. In other words, when a large volume or variety of the same type of data spans across different parts of the organization, it may be necessary to have more people represent its management.

The SDOH Subcommittee can also benefit from non-State employee members who represent the interests of specific populations affected by the policies or data managed by the SDOH Subcommittee. These members can provide first-hand insight or feedback concerning policies or data governance activities that would impact the relevant population. The non-State employee members should be non-voting members.

Recommended Meeting Cadence

The SDOH Subcommittee should meet at least every two months to set priorities and direction for the SDOH domain. The frequency can be adjusted to best suit the needs of governance initiatives. It may switch to a quarterly session as dictated by the volume, pace, and priority of its backlog of outcomes and use cases.

SDOH Domain Governance Owner

At the federated or domain level, this role serves as the program manager responsible for SDOH Subcommittee operations and is also accountable to the SDOH Subcommittee. The SDOH Domain Governance Owner assists the SDOH Subcommittee in organizing and aligning its efforts to meet its objectives. The person in this role manages the coordination of all agile teams (discussed in the next section) and assists them in reporting status updates to the SDOH Subcommittee. The SDOH Domain Governance Owner is also responsible for the systems and rules used to ensure data meets regulatory requirements and is well-organized, safe, accessible, and valuable.

The UHDS Data Governance Owner within the centralized UHDS Data Governance team coordinates all the federated domain teams, including the SDOH domain team. The UHDS Data Governance Owner assists the SDOH Domain Governance Owner with reporting the status of SDOH domain initiatives to the UHDS Data Governance Council. If the SDOH Subcommittee is managing three or less active initiatives, the Council may request the UHDS Data Governance Owner to manage SDOH governance operations. If the SDOH domain has three or more active initiatives, it is recommended to establish an SDOH Domain Governance Owner assigned exclusively to the SDOH Subcommittee.

Agile Teams

Agile teams are formed to support a specific use case or initiative defined by the SDOH Subcommittee. Once the use case is completed, the team is dissolved. These teams are assembled for a specific purpose and meet on an as-needed basis to drive progress on their objectives. The number of these teams within one domain can vary based on the SDOH Subcommittee's priorities and the bandwidth of team members.

Each agile team will have one team lead and at least one co-lead. The team lead works with the SDOH Domain Governance Owner to construct, coordinate, and direct the team toward the objective(s) set out by the SDOH Subcommittee. The SDOH Domain Governance Owner assists the team lead with reporting the status of team initiatives to the SDOH Subcommittee.

Membership

Agile teams may consist of technical specialists, business subject matter experts (SMEs), data product owners, or a combination of subdomain roles as defined in the Other Domain Roles and Responsibilities section of this document.

Recommended Meeting Cadence

The intended nature of these teams is to be agile, so it is expected that after the team is formed, the group should meet frequently to understand the objective(s) and clearly define the actions necessary. Based on those action steps, the team should then meet as frequently as necessary to drive progress on activities and provide updates to the SDOH Domain Governance Owner and SDOH Subcommittee.

Other Domain Roles and Responsibilities

This section outlines the key roles and responsibilities that are foundational to any domain within the UHDS Data Governance Framework. Although, additional roles may be identified, the following are the most common participants in domain subcommittees and agile teams.

Data Product Owners

A data product owner has ownership of and accountability for a business operation, function, or system that produces and uses data within an organization. These individuals are typically in department leadership positions and are accountable to maintain data quality and manage other risks associated with the business function and system. Although data product owners may not work directly with their data every day, they are responsible for overseeing and protecting the system as a whole.

Data Custodians

A data custodian has administrative and/or operational responsibility over the information system contributing subdomain data. In cases of very large multi-module systems, there can be multiple data custodians. These individuals should have a thorough understanding of security risks that can impact data (e.g., storing or transmitting sensitive data in an unencrypted form). Data custodians also assist with gaining a better understanding of technical system risks.

Data Stewards

Data stewards are accountable for business controls, data content, and metadata management related to a set of information assets in a system. They work with stakeholders that are impacted by data to develop definitions, standards, and data controls. They may also sponsor data quality, acquisition, and entry initiatives. Data stewards are well-versed in the unique operations, processes, regulations, and constraints for a system. In many cases, business and operational units that use the same data may view it differently. Data stewards ensure the data that is provided and accessible to teams supports all business needs and meets regulatory requirements.

Subject Matter Expert

“SME” is a generic term for someone who understands the business and programs/services that generate or use data. SMEs have broad institutional knowledge of the programs and measures for success. These individuals are key to understanding business definitions of data elements and interpreting their meaning in relation to business and program operations.

Organizational Structure Best Practices

The following best practices should be considered when establishing the SDOH data governance organizational structure:

- Appoint or hire an SDOH Domain Governance Owner who can communicate among leadership, program areas, and technical personnel
- Ensure all subdomains of interest have representation within the data governance structure at the leadership/policy and implementation levels
- Identify roles to include in the data governance structure from each participating subdomain
- Establish membership criteria to help staff transitions and program sustainability over time
- Make attendance for data governance meetings mandatory and require a proxy be sent if someone cannot attend
- Establish an onboarding process for new members of any data governance group
- Periodically revisit the purpose, goals, and progress of the data governance effort with leadership

SDOH Domain Operations

Data governance tackles a broad spectrum of challenges, from ensuring confidence in data quality to mitigating privacy and security risks. Although arising from diverse circumstances, the data governance needs within departments and programs often share the following common traits:

- **Widespread** – Instead of being confined to a single department, similar data governance needs typically arise independently across the agency.
- **Interconnected** – A data governance issue in one area frequently impacts another process downstream.
- **Ongoing** – As initiatives increasingly rely on data, the need to enhance data governance practices will continue to grow.

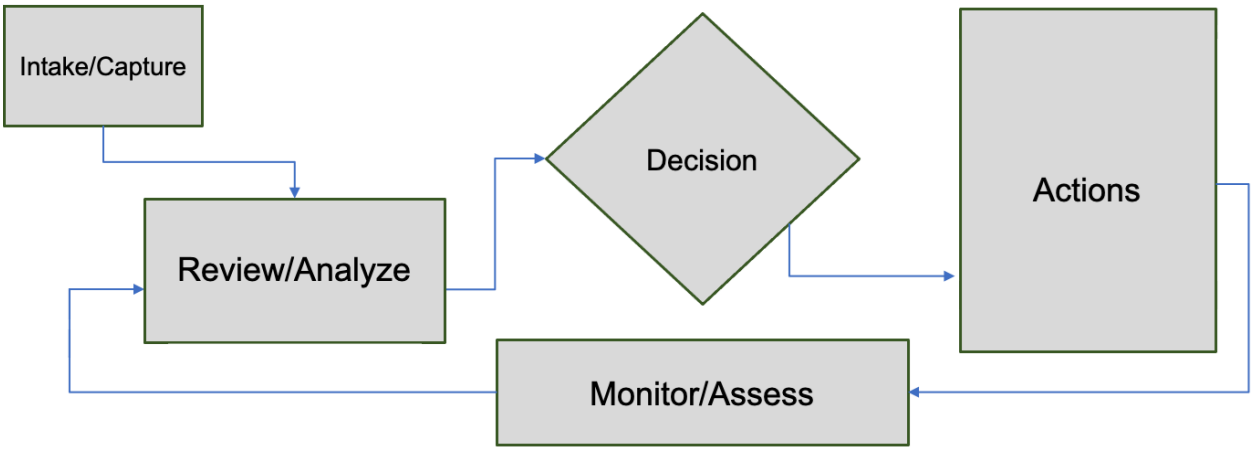
To accommodate governance needs within the SDOH domain, the SDOH Subcommittee must adopt and maintain a clear and transparent process for successfully addressing data governance issues. Solutions and policies must be developed and deployed in accordance with the following principles:

- **Multi-Departmental** – The process must account for the regulatory and privacy needs of each AHS department and program contributing data to the domain.
- **Comprehensive** – The process must anticipate the interdependencies of data governance issues.
- **Evolving** – The process must be flexible enough to continuously maintain and update solutions and policies to reflect the ever-changing nature of data use within the agency.

How the SDOH Domain Governance Process Works

The SDOH Subcommittee approval process depicted in Figure 4 will support these principles and ensure issues are addressed collaboratively.

Figure 4: SDOH Subcommittee Approval Process



Intake and Capture (The Backlog)

SDOH data governance issues may be submitted to or raised by agile teams, the SDOH Domain Governance Owner, or the SDOH Subcommittee. Once submitted, issues will be added to the backlog, which serves as the central repository for all known SDOH data governance needs. Submission of an issue (e.g., data quality issues, strategic objectives, initiatives, etc.) initiates review and analysis by the SDOH Domain Governance Owner.

Review and Analysis

The SDOH Domain Governance Owner has the responsibility to ensure every item in the backlog is valid and complete, meaning it has enough context for the SDOH Subcommittee to make an educated decision. When there is not enough context provided for an item, the SDOH Domain Governance Owner must work with people in respective data governance roles (e.g., data stewards, data custodians, etc.) within the subdomains of the item to provide the missing context. The SDOH Domain Governance Owner supports root cause analysis (RCA) in collaboration with the appropriate subdomain roles. This information allows the SDOH Subcommittee to properly prioritize the items in the backlog.

The appropriate level of clarity for an item in the backlog should include the following:

- A detailed description of the work being requested
- The system(s) that are involved or affected
- Whether it affects one or more departments
- A description of the impact and what happens if it is not addressed
- The expected outcome and benefits
- A light RCA (in the case of an issue)
- How to ensure the appropriate use of data throughout the process
- How to communicate results/outcomes

An item cannot move forward in the process without the appropriate level of clarity.

Decision

The SDOH Subcommittee makes decisions on backlog prioritization, policies, new processes, changes to existing processes, funding, and changes to this SDOH Data Governance Plan. When the SDOH Subcommittee decides what to do with items in the backlog, the SDOH Domain Governance Owner presents the items to the UHDS Data Governance Owner, who subsequently reviews them with the UHDS Data Governance Council to ensure alignment with other UHDS domain initiatives. The SDOH Domain Governance Owner also communicates SDOH Subcommittee decisions to agile teams for implementation, when appropriate. In some cases, this is either delegated to or supported by others in subdomain data governance roles.

The following criteria should be considered when the SDOH Subcommittee evaluates and prioritizes items in the backlog:

- Opportunities directly aligned with the stated priorities of AHS or the SDOH Subcommittee should be prioritized over those that are not designated as a priority focus area.
- Opportunities that impact multiple departments, programs, or initiatives should be prioritized over those that are unique to an individual entity.
- Opportunities with clear expectations of impact or anticipated results should be prioritized over those with more ambiguous or uncertain outcomes.
- Opportunities with a greater amount of dependent work should be prioritized over those that do not require additional work to move forward.

Items can be categorized into the following simple groups:

- **Low-Priority** – When the SDOH Subcommittee identifies a data governance need that already has existing processes or policies, it is considered low-priority. The impact of this item is limited to one group, not many. The overall impact of working on this item is low in comparison to other items. No activities are dependent on this item being worked on or the item may not completely align with the goals of the SDOH Subcommittee.
- **High-Priority** – In circumstances where a department or subdomain identifies a data governance policy need and the opportunity is deemed to be of high priority, the SDOH Subcommittee should immediately refer the work to the appropriate agile team(s) for development.

Once an item is determined to be an active governance working item, regardless of its priority level, the SDOH Subcommittee will determine which group will be responsible for the item. The SDOH Subcommittee can assign the item to a data product owner, SME, or existing agile team, or it can create a new agile team. The responsible party will execute and deliver specific objectives or outcomes. Recommendations on team members can come from SDOH Subcommittee, the SDOH Domain Governance Owner, or subdomain governance leadership/stewards.

Actions

The SDOH Domain Governance Owner is accountable for governance items to the SDOH Subcommittee and the agile teams. Alternatively, a selected subdomain role may act as the responsible party for the execution of all assigned governance items from the backlog. Depending on the nature of the original data governance item, the responsible party can take several actions.

Most data governance items, even business use cases, fall under one of the following action categories:

- New policy or change to existing policy
- New process or change to existing process
- New data onboarding
- Monitoring or reporting
- Use cases
- Training
- System enhancement
- Data corrections
- Stand-alone projects

For instance, data from Table 1 (SDOH data sources within AHS departments) and Table 3 (Vermont use case backlog) can be added as items to the initial backlog.

Monitor and Assess

As work continues, progress is reported back to the SDOH Subcommittee at the same frequency as the SDOH Subcommittee meetings. The SDOH Domain Governance Owner will do the following:

1. Ensure proper documentation is complete
2. Perform a final review and acceptance of work products
3. Ensure any necessary changes are communicated to the appropriate audiences
4. Close out the governance activity

The SDOH Domain Governance Owner will also determine if the activities in this workstream are related to any of the others in the backlog and update them accordingly.

Decision-Making Throughout the Governance Process

While the SDOH Subcommittee will make decisions on prioritizing backlog items, many other decisions will be made at various levels throughout the governance process. This section describes how that decision-making should work and be documented.

SDOH Subcommittee Decisions

As previously mentioned, the SDOH Subcommittee makes decisions on policies, new processes, changes to existing processes, backlog prioritization, funding, and changes to this SDOH Data Governance Plan. Decisions are all made by majority vote by all voting members of the subcommittee. Non-voting members include the SDOH Domain Governance Owner and any external advisors who may provide input to inform decisions but are unable to vote.

Agile Team Decisions

An agile team may make recommendations to the SDOH Subcommittee on policies, processes, specific projects or solutions to fund, and changes to this SDOH Data Governance Plan. The agile teams can also make recommendations to subdomain and system-level teams on processes and policies. Recommendations produced from agile teams are considered for approval by the SDOH Subcommittee.

Decision Tracking

Decision tracking serves as an effective way to recount the rationale behind decision-making. A decision log is a document that captures the details of a situation, options, final decision, and rationale in a single place. All decisions voted on by the SDOH Subcommittee will be recorded in a decision log document. The basic scope of decision tracking is to log decisions about policy, processes, data onboarding, funding, and this SDOH Data Governance Plan. The decision log should also be updated as the SDOH Subcommittee actively maintains and reviews data processes. The SDOH Domain Governance Owner will maintain the decision log and use it to report upward to the UHDS Data Governance Council through coordination with the UHDS Data Governance Owner.

Data Sharing

Data integration is critical to identifying social needs and developing solutions tailored to specific populations. To enable data integration, there is a need to create more avenues for data sharing. To facilitate mutually understood, lawful, and quality data sharing, the SDOH Subcommittee should establish policies for interdepartmental agreements, regulatory considerations, consent management, and data standards.

Data Exchange Agreements

Written agreements that establish the legal authority to share data between entities are essential. They provide guidelines for the following:

- What data will be shared
- The purposes for which the data will be shared
- How the data will be shared

Memorandums of Understanding (MOUs) are commonly used for this purpose and are sometimes referred to as data sharing agreements (DSAs) or data use agreements (DUAs). These agreements typically outline the roles and responsibilities of each party, the scope of the collaboration, the objectives to be achieved, the timeline, and any financial commitments. In addition to providing a shared understanding and legal basis, MOUs help initiatives operate in concert, avoid duplication of efforts, and draw upon each other's strengths and resources effectively. They also offer a structured method for dispute resolution and provide a plan for monitoring and evaluating the success of the partnership. All of this ultimately fosters a more efficient and collaborative approach to addressing shared challenges and goals.

Digitized and standardized formats are strongly recommended. Existing agreements can be used to create templates for SDOH data-sharing needs. The following key items should be included within a data exchange MOU:

- Associated program(s)
- Use case and application of data
- Source data owner
- Applicable regulation and data sensitivities
- Target system of data store
- Data format and transport structures
- Data custodians and other relevant technical contacts
- General description of data
- Legal basis for exchange
- Data dictionary
- System of record
- Exchange frequency
- Data exchange method

Regulatory Considerations

The Health Insurance Portability and Accountability Act (HIPAA) is the federal law governing the sharing of health information. It allows certain disclosures without explicit consent for treatment, payment, healthcare operations, and public health purposes. Health information exchange (HIE) solutions are designed to facilitate the exchange of information within HIPAA-permitted uses. While informed consent is sometimes required for data exchange (e.g., 42 Code of Federal Regulations [CFR] Part 2 mandates consent for sharing substance use disorder [SUD] treatment information under specific circumstances), automating specific instructions in patient consent forms proves challenging for HIE solutions. Thus, HIEs have historically prioritized exchanging freely shareable data (compliant with the HIPAA principle of “minimum necessary”) between healthcare entities for permitted purposes.

Robust sources of SDOH information are often subject to different federal or state privacy rules and do not always fall under HIPAA. For instance, housing services information in the U.S. is typically collected in Homeless Management Information System (HMIS) databases and governed by the HMIS Privacy Rule. Similarly, health records maintained by educational institutions adhere to the Family Educational Rights and Privacy Act (FERPA). These rules dictate the purposes for which information can be shared and the required informed consent.

Connecting to and sharing SDOH data from these systems via HIE solutions requires navigating regulatory hurdles that may impact HIE design or use. For example, while HIPAA permits HIEs to share patient information with school-based nurses without informed consent, the nurses cannot reciprocate through HIE solutions under FERPA without informed consent. Individual interpretations of these rules by lawyers and privacy officers vary, and federal agencies and the court system have yet to clarify application issues. All of this creates a complex landscape that impedes HIE use cases.

Future efforts may examine how regulatory complexity affects implementing HIE projects involving SDOH data. The use of learning communities and document templates, such as data exchange MOUs, may mitigate complexity over time. Additionally, the HIE Steering Committee[17] acknowledges the U.S. Office for Civil Rights' proposed changes to HIPAA.[18] These changes would likely impact information exchange between existing HIPAA-covered entities and social services providers in the next few years. Supporting organizations in interpreting and implementing these proposed changes to promote information exchange between health and social service sectors is recommended for future endeavors.

The following legislative implications may affect Vermont's ability to share SDOH data in its data ecosystem:

- Vermont's Legislation similar to the European Union's (EU's) General Data Protection Regulation (GDPR)[19]
- Consumer Information Privacy Rule[20]
- 21st Century Cures Act[21] – Concepts and Penalties Against Information Blocking Overview[22]
- AHS Data Broker Policy[23]
- HIPAA (Including Application Fair Use)[24]

Ensuring the proper handling and use of data in alignment with regulatory requirements can be supported by implementing a data catalog for all data within the SDOH domain. A data catalog is an organized inventory of data/information assets in an organization. It lists what data is available and provides a common definition of each available data element. Once cataloged, data tagging provides a way to categorize the types of information that exist, such as tagging specific data elements as protected health information (PHI) or personally identifiable information (PII). Tagging can help manage risks involved in using or sharing data. For example, tagging can support the operations of policies that define role-based access control and data suppression thresholds for public reporting.

Consent Management

Currently, AHS stakeholders have separate consent collection policies specific to their programs. The good thing about this is that some processes are already in place to manage consent for data use. This works well for an individual unit or group, but it becomes problematic when multiple departments want to operate as a cohesive system in which information can flow seamlessly from one group to another. Currently, there are no baseline standards for the structure of consent forms. They vary across stakeholders as each program asks a different set of consent-related questions.

The reality is that regulations are changing. In April 2016, the EU enacted the GDPR, which provides enhanced rights and controls to individuals over their personal information. Since then, GDPR-like laws are becoming more common throughout the U.S. The need to manage consent is driving advanced strategies in data use transparency and traceability.

[17] https://healthdata.vermont.gov/HIESteeringCommittee
[18] https://www.hhs.gov/hipaa/for-professionals/regulatory-initiatives/fact-sheet-42-cfr-part-2-final-rule/index.html
[19] https://www.drm.com/articles/vermont-legislature-proposes-new-consumer-privacy-legislation/
[20] https://humanservices.vermont.gov/sites/ahsnew/files/documents/ConsumerInformationandPrivacyRule.pdf
[21] https://www.federalregister.gov/documents/2020/05/01/2020-07419/21st-century-cures-act-interoperability-information-blocking-and-the-onc-health-it-certification
[22] https://www.healthit.gov/topic/oncs-cures-act-final-rule
[23] https://humanservices.vermont.gov/sites/ahsnew/files/doc_library/5.27%20%20Draft%20Data%20Broker%20Policy.pdf
[24] https://www.hhs.gov/hipaa/for-professionals/privacy/guidance/minimum-necessary-requirement/index.html

What works for one set of data does not always apply to another set. This makes data security and compliance more complex for those responsible for the data. Technology platforms and governance programs should be in place to help manage compliance requirements at all levels. It is the duty of the State to manage the privacy, security, and access to patient information to the letter of the law. In practice, the keys to consent management are as follows:

- Validly obtain consent
- Consistently and compliantly maintain consent
- Activate and remove consent where necessary

All of these key pieces of consent management are necessary while also completely enabling the patient/consumer. The path forward must include getting closer to a universal consent mechanism within the SDOH domain. The universal consent process should include analysis and incorporation of regulations and statues applicable to all data sources feeding into the SDOH domain.

Foundational Data Structures and Standards

As indicated in the current state analysis of Vermont's SDOH data, a wide variety of systems capture and store SDOH data. This presents challenges in analyzing SDOH due to the inability to relate data from different systems. There is inconsistency in the format and overall types of SDOH data captured.

There is a need for departments to share a common data language, including technical format, subject matter semantics, definitions, etc. This challenge is not unique to Vermont. Just as the adoption of EHRs ushered in the creation of Health Level Seven (HL7) standard health records, there now is a new wave of extended standards related to the electronic capture of SDOH data.

Gravity Project

The Gravity Project is a multi-stakeholder public collaborative initiated by the Social Interventions Research & Evaluation Network (SIREN) with funding from the Robert Wood Johnson Foundation and EMI Advisors, LLC.[25] Working with stakeholders from across the globe, the Gravity Project develops and tests interoperability standards that streamline the capture and sharing of SDOH data. There are three workstreams within the Gravity Project, as follows:

- **Terminology** – The goal of this workstream is to create terminology, definitions, and data sets for social needs and risk domains so they may be understood and applied across healthcare systems. The data sets are divided into four areas: screening, diagnosis, goal-setting, and interventions.
- **Technical** – The goal of this workstream is to expand SDOH availability within electronic systems utilizing HL7 Fast Healthcare Interoperability Resources (FHIR). This workstream addresses the electronic system's ability to record, document, and exchange SDOH information across healthcare and social service systems, enhancing the interoperability of the data while ensuring the privacy, safety, and security of patient information.
- **Pilots** – The goal of this workstream is to validate coded terminologies and FHIR Implementation Guides identified by the Gravity Project through testing across clinical, payer, social services, and government electronic systems.

By establishing a common language for SDOH factors, the Gravity Project enables better understanding of health disparities and can enhance care delivery, population health management, and health equity efforts.

[25] https://thegravityproject.net/overview/

United States Core Data for Interoperability

The United States Core Data for Interoperability (USCDI) is a standardized set of health data classes and elements that forms the baseline structure for the exchange of data between health IT systems. The USCDI, managed by the Office of National Coordinator for Health Information Technology (ONC), is foundational to nationwide, interoperable health data exchange. USCDI was adopted as a standard to support clinical, technology, and policy changes. Inclusion of SDOH data began in July 2021.[26]

The Gravity Project makes recommendations on the SDOH-specific data elements to be included in USCDI. Those are then submitted or presented for adoption into the USCDI standard so they can later be implemented by certified vendors; public health organizations; and health exchanges, providers, and information networks alike.

Domain Operations and Data Sharing Best Practices

The following best practices should be considered when establishing guidelines around SDOH governance domain operations and data sharing:

- Create a master MOU template for all parties sharing data as part of AHS that details the specifics of what data will be shared for which purposes
- Establish a regulatory review cycle of both the data policy and governance plans to ensure they remain current and accurately reflect the data governance effort
- Post all policies and plans in a location accessible to all members of the data governance effort and consider making appropriate documents available publicly or internal to the state
- Maintain a reference log whenever a new data governance policy or process is established
- Collect and incorporate feedback from stakeholders to support prioritization of SDOH data governance initiatives

Use Cases

There are several initiatives actively working to capture or use SDOH data in Vermont. Three key initiatives are occurring within VCCI, HCR, and VDH. VCCI represents the effort to capture SDOH data that is ultimately stored in VHIE. HCR has implemented an HRSN standard screening pilot designed to standardize SDOH screening. Finally, the Social Autopsy Report (SAR) integrates data from across the State of Vermont to inform interventions for preventing drug overdose deaths. All three initiatives represent critical steps in the evolution of Vermont's ability to generate and store SDOH data, which is the foundation necessary to initiate the (expanded) use of such data.

[26] https://www.healthit.gov/isa/sites/isa/files/2021-07/USCDI-Version-2-July-2021-Final.pdf

Vermont Chronic Care Initiative

VCCI provides holistic, intensive, and short-term case management services to Vermont residents enrolled in Medicaid, including dually eligible members. VCCI case managers and outreach coordinators welcome NTM members and screen them to identify and prioritize needs. The screening tool asks questions about access to care (including primary and dental), the presence and status of health conditions, and other needs that would help them maintain and/or improve their health such, as housing, food, and safety.[27]

Initial efforts to capture SDOH data with VCCI have demonstrated the ability to define data, implement a tool, capture the data, and allow the data to flow through to the HIE. There are currently two assessment tools used with this project: the general screening assessment and the NTM screening assessment. The general screening assessment contains up to 137 questions. The NTM screening assessment has 32 questions. As of the writing of this document, none of the questions from either survey directly map to SDOH data elements defined by the Gravity Project or USCDI.

HRSN Screening Standard Pilot

The HRSN screening standard pilot initiative originated from an outreach project geared to assess the needs for people utilizing Vermont's Blueprint for Health program and All-Payer Accountable Care Organization (ACO) Model.[28] The project highlighted a need for a universal approach to screening a variety of needs, no matter how individuals encountered state programs.

The goal of this Blueprint for Health and OneCare pilot program is to agree on a set of questions to ask as a standard screening tool. The pilot will provide feedback on how to adjust the current questions and how the overall screening process should change for programs across departments. This includes the technology and tools used to conduct screenings. Features are built into some of the screenings that provide referrals immediately to the person being screened. This allows for immediate knowledge about resources and is especially helpful to those who are not fully aware of the resources available in a given situation (based on the answers to the questions). These efforts can serve as the foundation for the creation of a standard screening tool that can support needs assessments and the use of SDOH data across multiple departments within AHS.

Social Autopsy Report

The SAR analyzes data from several systems to identify trends and relationships among Vermont residents who died from a drug overdose and their interactions with the State of Vermont.[29] The analyses are intended to inform future interventions and recommendations to prevent future drug overdose deaths.

VDH's current data gathering process is complex and requires manual procedures and agreements to be in place to gain data from partners. The SAR shows that there are opportunities for screening, intervention, education, or outreach about the risks of substance use and overdose prevention. One of VDH's three main categories of recommendations from the report is to expand data collection and analysis. The VHIE Master Person Index (MPI) can be used to match disparate data, allowing linkage between multiple systems. The ease of access for VDH will increase significantly, allowing VDH more time to analyze the data, draw trend conclusions, and more effectively serve Vermonters with SUDs.

[27] https://dvha.vermont.gov/providers/vermont-chronic-care-initiative
[28] https://www.cms.gov/priorities/innovation/innovation-models/vermont-all-payer-aco-model
[29] https://www.healthvermont.gov/media/news-room/new-social-autopsy-report-examines-drug-overdose-trends-vermont

Use Case Backlog

Table 3 outlines the use cases gathered during the Vermont stakeholder engagement interviews. Each use case is briefly described and includes a recommended timeframe for considering the use case as an initiative for the SDOH Subcommittee. The timeframes are defined as follows:

- Immediate – as soon as the organization is established
- Short-Term – within the next 3-6 months
- Mid-Term – in the next 6 months to 1.5 years
- Long-Term – in the next 2-3 years

Table 3: Vermont Use Case Backlog

Timeframe	Department	Use Case Description
Immediate	Bi-State PCA, HCR	Standardize SDOH screening tools across AHS
Immediate	DVHA	Contribute individual-level NTM assessment data to the SDOH domain to assist with referrals and addressing social needs
Immediate	VDH	Automate and expand the SAR
Short-Term	HCR	Align SDOH housing survey questions to those from HMIS for consistency
Short-Term	HCR	Support the advancement of federal health equity models, such as the Advancing All-Payer Health Equity Approaches and Development (AHEAD) Model, by assessing baseline status and evaluating progress
Short-Term	VDH	Enable original data owners to see how data is being used (data traceability)
Short-Term	VITL	Prioritize SDOH use cases for the State
Short/Mid-Term	Bi-State PCA	Improve the reporting of ICD-10-CM Z codes on provider claims
Short/Mid-Term	Bi-State PCA	Build a risk-benefit profile to determine the benefits of data sharing
Short/Mid-Term	HCR	Provide data to support health equity across programs
Short/Mid-Term	HCR	Provide data to the Governor's Office to support tailored interventions for the housing crisis
Short/Mid-Term	VDH	Develop methods to identify food and financial security
Short/Mid-Term	VITL	Normalize local SDOH data terminologies to a standard structure
Mid-Term	DOC	Create community SDOH profiles for DOC to better transition reintegrating citizens and reduce recidivism
Mid-Term	DVHA	Link DVHA data with VCCI health screening data for the purpose of SDOH-based impact population discovery
Mid-Term	HCR	Provide holistic de-identified data to state leadership
Mid-Term	VDH	Identify programs with legacy systems that make understanding SDOH needs difficult and establish SDOH data sharing and/or reporting to support decision-making
Mid-Term	VITL	Enhance collaboration with community organizations (like ACOs with population health)
Mid/Long-Term	DVHA	Use expanded Blueprint for Health screening data to understand more about issues within communities for point of care (POC) support and coordination with other resources/interventions
Mid/Long-Term	DVHA	Create value-based payment incentives that encourage providers to connect patients with resources to close need gaps (transportation, food, housing)
Mid/Long-Term	HCR	Match survey data with clinical information to see trends for how people answered, the health conditions they have, and their clinical information
Mid/Long-Term	HCR	Support primary care integration with SUDs and mental health
Mid/Long-Term	HCR, Bi-State PCA	Move toward wraparound services (close the loop), providing a continuum of care by mining SDOH data to identify who is eligible for other services
Long-Term	DVHA	Create a longitudinal human service record where you can start to see patterns and relationships between healthcare utilization and SDOH

Program Sustainability

This SDOH Data Governance Plan outlines the recommended governance approach and highlights use cases that will initiate the SDOH domain within UHDS. To ensure the success and sustainability of the SDOH domain, it is important to consider additional factors that will influence operations. The following sections detail these considerations.

Funding

Creating a sustainable data governance effort will require resources to support the ongoing efforts behind the goals of the program. Considering the increased focus on using SDOH data to steer programmatic interventions, federal funding mechanisms represent an often-underused funding source for building and enhancing SDOH data, analytics, and technology infrastructure. These opportunities exist at the state, local, and community levels. There are four major methods to consider in relation to funding efforts around SDOH data, as follows:

- **Waivers and Authorities** – Several Medicaid waivers and authorities have provided flexibility for funds to address nonmedical services. Examples include enhanced case management, transportation assistance, food assistance, educational services, employment, and housing supports. Additional details may be found in the 2021 CMS letter to State Health Officials titled "Opportunities in Medicaid and CHIP to Address Social Determinants of Health (SDOH)."[30]
- **Federal Agencies and Programs** – Federal agencies and programs have a mix of sources that regularly fund Medicaid agencies and support SDOH data initiatives, such as the Center for Medicare and Medicaid Innovation (CMMI) and Medicaid Enterprise System (MES). Other sources solely focus on SDOH supports outside of Medicaid, such as the Health Resources and Services Administration (HRSA) and the U.S. Department of Housing and Urban Development (HUD).
- **Emerging Opportunities from Recent Legislation** – State and federal legislation often provides opportunities for funding initiatives related to improving health and well-being. For example, recent legislation tied to COVID-19, like American Rescue Plan Act (ARPA) funds, have been extended. ARPA provided funding to enhance access and quality of Home and Community-Based Services (HCBS). This funding can be used to improve cross-sector SDOH data integration, including the implementation of standards and data governance, to support initiatives that promote health equity and reduce disparities among Vermonters needing HCBS.
- **Managed Care Standards and Supports** – States can look for federal standards that can affect managed care, such as medical loss ratio (MLR) inclusion regulations.[31] MLR is a financial measurement defined by CMS that looks to demonstrate and ensure value for beneficiaries. This value is measured by quality improvement activities to improve healthcare outcomes, including wellness and SDOH.[32]

Role Accountability and Participation

Executive sponsorship and support is the single most important factor to the success and longevity of any governance initiative. Leadership must commit to and communicate the vision for the use of SDOH throughout AHS. The SDOH Subcommittee must be held accountable to the UHDS Data Governance Council for the goals of the SDOH domain.

[30] https://www.medicaid.gov/federal-policy-guidance/downloads/sho21001.pdf
[31] https://www.ecfr.gov/current/title-45/subtitle-A/subchapter-B/part-158/subpart-A/section-158.150
[32] https://aspe.hhs.gov/reports/social-determinants-health-data-sharing-community-level

Resourcing is also closely linked to funding. While SDOH domain governance efforts should not require significant increases in headcounts, there may be a need for additional resources to begin and grow processes.

Future Data Sources

This plan has focused on individual-level SDOH data sources and use cases. However, community-level SDOH data is readily attainable from many public sources. It can be linked with health data on local geographic levels to assess the effect of social and community factors on individual health outcomes within Vermont. The future data sources include a mix of both individual-level and aggregated data sources.

The list of SDOH data sources within AHS departments in Table 1 can be used to populate the backlog with data sources for inclusion in UHDS. Table 4 lists additional data sources from within AHS departments that should be added to the backlog for the SDOH Subcommittee to prioritize. On the other hand, Table 5 lists data sources that are external to AHS. They can be considered for inclusion in the backlog when the scope of the SDOH domain governance initiative expands. In both tables, potential priority sources are flagged with an asterisk (*) at the end of the data source name. The methodology for determining priority is explained in Appendix C: Prioritization Method for Future Data Sources of this document.

Table 4: SDOH Domain Data Sources Internal to AHS for the Backlog

Data Source	Smallest Geographic Level	Description of Data
Health Statistics and Vital Records – VHHIS	County	• DVH conducts periodic household surveys of Vermont residents • Measures uninsured rate/coverage sources for insured residents • Collects relevant demographic, income, and employment characteristics information
DCF – GA Emergency Housing Program (CommCare)	Person	• Pilot program to consolidate screening questions • Survey data originally from the GA Emergency Housing Program (CommCare)
DCF – FSDNet/ SSMIS*	Person	• Web-based platform in which Family Services Workers complete case documentation, such as case notes • FSDNet communicates with SSMIS (case management system that contains all case related information)
DCF – Reach Up/Reach First	Person	• Eligibility data • Includes household income and living expenses
DCF – 3SquaresVT	Person	• Household need data over time • From the Economic Services Division
DOC – Risk-Based Assessment*	Person	• Currently collecting risk assessment surveys, including SDOH and interventions data
Vermont Open Geodata Portal[33]	Census Tract, County	• Openly available geodata • Topics: Economic, Transportation, Health, and Public Safety
Vermont Social Vulnerability Index (SVI)[34]*	Census Tract, County	• Looks at social vulnerability • Examines the resilience of communities when responding to or recovering from threats to public health

[33] https://geodata.vermont.gov/
[34] https://www.healthvermont.gov/environment/tracking/vulnerability-indicators#:~:text=Heat%20Vulnerability%20Index-,Social%20Vulnerability%20in%20Vermont

Table 5: Data Sources External to AHS for Future Inclusion in the Backlog

Data Source	Smallest Geographic Level	Description of Data
Vermont Department of Labor*	Individual	• Unemployment insurance wage data* provides a valuable indicator of economic status • Unemployment insurance claims data can be an indicator of a disruption in economic status
Vermont Crime Information Center (VCIC)	Census Tract, ZIP Code	• Crime activity data • Reported to the FBI and can be viewed through the public portal or received internally
Agency for Health Research and Quality (AHRQ)*	County, ZIP Code, Census Tract	• Makes it easy to find a range of well-documented, readily linkable SDOH variables across domains without having to access multiple source files • Facilitates SDOH research and analysis
HCR – CMS AHEAD Model	Individual	• Builds upon the Vermont All-Payer ACO • Focuses on whole-person care, including social needs
U.S. Census Data	Census Tract, ZIP Code, County	• Publicly available data • Spans 130 surveys and programs
U.S. Department of Agriculture (USDA) – Food Atlas[35]	County, Federal Information Processing System (FIPS)	• Food environment factors interact to influence food choices and diet quality • Includes store/restaurant proximity, food prices, food/nutrition assistance programs, and community characteristics
U.S. HUD – Location Affordability Index (LAI)[36]	County, FIPS, Census Tract	• Provides combined cost of housing and transportation data
Center for Health Disparities Research (CHDR)	Census Block Group	• Area Deprivation Index (ADI) allows for rankings of neighborhoods by socioeconomic disadvantage in a region of interest (e.g., at the state or national level)
Opioid Environment Policy Scan (OEPS)[37]*	Census Tract, ZIP Code, County	• Free, open-source data warehouse • Centered on the multi-dimensional risk environment impacting opioid use and health outcomes • Focuses on justice communities across the United States
County Health Rankings[38]*	State, County	• Models the various factors which contribute to health • Includes physical, social, clinical, and health behaviors

Measuring Success

The following categories of measures should be considered when establishing an SDOH data governance program:

- **Process measures** which track program implementation and operations to make sure the program is operating as intended
- **Outcome measures** to assess program impact
    - **Short-term outcomes** focused on impacting health and well-being for individuals
    - **Long-term outcomes** measuring the impact to healthcare costs and utilization, population health, and community well-being

[35] https://www.ers.usda.gov/data-products/food-environment-atlas/go-to-the-atlas/
[36] https://www.hudexchange.info/programs/location-affordability-index/
[37] https://www.jcoinctc.org/opioid-environment-policy-scan-oeps-data-warehouse/
[38] https://www.countyhealthrankings.org/

Process Measures

One of the ways to measure the success of the data governance program is to consider the components that enable the program to operate. Operational metrics measure some of the following items:

- Data usage and adoption
- Compliance with data standards or policies
- Meeting timelines and interim goals
- Roles defined and delegated
- Data stewardship activities
- Governance training and awareness
- Quantity and quality of initiatives

Early in the life the of the program, as targets are identified, it will be difficult to measure outcomes. The aforementioned operational metrics can be helpful when determining how well the program is established. If the program encounters problems operating, it will not be able to effectively achieve the intended outcomes. This fact makes it necessary to maintain these metrics throughout the life of the program.

Outcome Measures

The Healthy People 2030 initiative uses a method called the Leading Health Indicator (LHI) as a guiding methodology to quantify objectives through measures. LHIs represent a carefully selected subset of high-priority objectives from Healthy People 2030, aimed at spurring action to enhance health and well-being. These objectives span various stages of life and encompass a wide range of factors focused on key determinants that influence major causes of morbidity and mortality in the United States. By highlighting these areas, LHIs assist organizations at all levels to direct their efforts and resources toward advancing the health and well-being of the population.

The requirements for LHIs include data that is ”valid, reliable,” and “nationally representative” with “no major methodological concerns.” It is also preferable that the data contains “demographic and geographic detail.” Sources of data should have “management or oversight” from the Federal Government and be “publicly available.”[39]

These can be used as a reference to guide the development of a unique set of measures specific to Vermont. When constructing measures, it is important to develop a data strategy and plan that defines key parameters for validity and sustainability, including the following:

- Calculation methodology (e.g., definition, inclusions, exclusions)
- Meaningful stratifications
- Data sources
- Bias and threats to validity
- Ability to quantify baselines
- Desired benchmarks or target values

Communications to Build Buy-In

A thoughtful data governance communication strategy and plan will help preserve operational excellence, provide clarity and consistency for data management and governance, and facilitate collaboration across the agency. These will all help ensure leadership and staff members know what is being done and why. The purpose is to create both formal and informal feedback loops as the Agency’s governance needs evolve.

[39] https://health.gov/healthypeople/objectives-and-data/leading-health-indicators

The goals of communication should include the following:

- Provide clear and transparent communication of the Vermont health data strategy
- Improve awareness of the data and analytics resources at the Agency and beyond
- Arm the State of Vermont with timely and accurate data to communicate evidence during critical policy and decision-making conversations
- Communicate the stories behind the vast amounts of Agency data to external stakeholders and policy makers to proactively share the State of Vermont's health story

Immediate Next Steps

The following steps outline the logical progression to initiate the data governance program over the next three to six months:

- Identify an SDOH Domain Governance Owner and define the formal description of the role.
- Identify which departments, programs, or other entities need to be represented in the governance structure.
- Create the SDOH Subcommittee and invite or assign people to take on the appropriate governance roles.
- Host a kickoff meeting to introduce (or reacquaint) participants with the purpose, scope, and work of data governance, including their roles and responsibilities within the effort.
- Revisit the priority use cases to establish the initial governance backlog to identify, describe, prioritize, assign responsibility for, and track progress towards resolving important issues.
- Develop a communication strategy to convey the value of the SDOH data governance effort.
- Determine which metrics make sense to track as the SDOH domain is built. Start with process metrics, as mentioned in the Measuring Success section, and then move to outcome measures.
- Create a central electronic repository of all SDOH domain data governance policies and processes that is accessible across AHS.
- Institute a systematic review process to identify additional sources of SDOH data.
- Acquire and integrate public population-level data sets.

Appendix A: Acronym List

Table 6 provides a list of the acronyms and initialisms used throughout this SDOH Data Governance Plan.

Table 6: Acronym List

Acronym	Definition
AAFP	American Academy of Family Physicians
ACO	Accountable Care Organization
ADI	Area Deprivation Index
AHEAD	Advancing All-Payer Health Equity Approaches and Development
AHRQ	Agency for Health Research and Quality
AHS	Agency of Human Services
ARPA	American Rescue Plan Act
CBO	Community-Based Organization
CDC	Centers for Disease Control and Prevention
CFR	Code of Federal Regulations
CHDR	Center for Health Disparities Research
CHIP	Children's Health Insurance Program
CHT	Community Health Team
CMMI	Center for Medicare and Medicaid Innovation
CMS	Centers for Medicare & Medicaid Services
COE4CCN	Center of Excellence on Quality of Care Measures for Children with Complex Needs
CPSTF	Community Preventive Service Task Force
DA	Designated Agency
DAIL	Disabilities, Aging and Independent Living
DCF	Department for Children and Families
DOC	Department of Corrections
DSA	Data-Sharing Agreement
DUA	Data Use Agreement
DVHA	Department of Vermont Health Access
ED	Emergency Department
EHR	Electronic Health Record
EU	European Union
FERPA	Family Educational Rights and Privacy Act
FHIR	Fast Healthcare Interoperability Resources
FIPS	Federal Information Processing System
GA	General Assistance
GDPR	General Data Protection Regulation
HCA	Office of the Health Care Advocate
HCBS	Home and Community-Based Services
HCR	Health Care Reform
HHS	U.S. Department of Health and Human Services
HIE	Health Information Exchange
HIPAA	Health Insurance Portability and Accountability Act
HL7	Health Level Seven
HMIS	Homeless Management Information System

Acronym	Definition
HRSA	Health Resources and Services Administration
HRSN	Health-Related Social Needs
HUD	Department of Housing and Urban Development
IE	Integrated Eligibility
IT	Information Technology
LAI	Location Affordability Index
LHI	Leading Health Indicator
LOINC	Logical Observation Identifiers Names and Codes
MES	Medicaid Enterprise System
MLR	Medical Loss Ratio
MOU	Memorandum of Understanding
MPI	Master Person Index
NTM	New to Medicaid
OEPS	Opioid Environment Policy Scan
OMS	Offender Management System
ONC	Office of the National Coordinator for Health Information Technology
OPIP	Oregon Pediatric Improvement Project
PCA	Primary Care Association
PHI	Protected Health Information
PII	Personally Identifiable Information
POC	Point of Care
PRAPARE	Protocol for Responding to & Assessing Patients' Assets, Risks & Experiences
RCA	Root Cause Analysis
SAR	Social Autopsy Report
SDOH	Social Determinants of Health
SIREN	Social Interventions Research & Evaluation Network
SME	Subject Matter Expert
SNAP	Supplemental Nutrition Assistance Program
SSA	Specialized Service Agency
SSMIS	Social Services Management Information System
SUD	Substance Use Disorder
SVI	Social Vulnerability Index
TANF	Temporary Assistance for Needy Families
UHDS	Unified Health Data Space
USCDI	United States Core Data for Interoperability
USDA	United States Department of Agriculture
VCCI	Vermont Chronic Care Initiative
VCHIP	Vermont Child Health Improvement Program
VCIC	Vermont Crime Information Center
VDH	Vermont Department of Health
VHHIS	Vermont Household Health Insurance Survey
VHIE	Vermont Health Information Exchange
VITL	Vermont Technology Information Leaders
WHO	World Health Organization

Appendix B: Examples of SDOH Data Application Outcomes

This appendix provides three examples of success in sharing and using SDOH data to effect health outcomes in jurisdictions other than Vermont. These examples are provided to further demonstrate the benefits of harnessing this under-tapped resource.

Colorado – Suicide Prevention

According to the HHS Healthy People 2030 initiative:

> Suicide is one of the leading causes of death nationwide, particularly among young people. In addition, suicide rates have increased in almost every state over the last 2 decades. Interventions to address behaviors that increase the risk of suicide, like drug and alcohol misuse, may help reduce the suicide rate nationwide.[40]

Colorado ranks among the top 10 states in the U.S. for suicide deaths. Between 2009 and 2013, the number of deaths resulting from suicide surpassed the combined totals from motor vehicle accidents, falls, poisoning, and homicides.[41] In 2014, the Colorado General Assembly created the Suicide Prevention Commission. The Colorado Office of Suicide Prevention supports the Commission, along with 25 members from the private and public sectors.

Suicide prevention programs in Colorado have faced many challenges, including the following:

- Lack of mental health resources in rural areas
- High number of firearm-holding households
- Overall shortage of mental health providers
- Status as a local control state (i.e., priority is given to local policies over state policies)

The Suicide Prevention Commission has the responsibility to make evidence-based recommendations to the state legislature annually. Despite the previously mentioned challenges, the Commission set an impressive goal of a 20 percent reduction in the suicide rate by 2024.

The Commission relies heavily on data and data improvements to help formulate recommendations to the state legislature. The Commission uses a variety of data from the Colorado Office of Vital Statistics, the Colorado Violent Death Reporting System, emergency department (ED) and hospitalization datasets, and more. Recognizing that a multitude of community factors contribute to either decreasing or increasing the risk of suicide, the Commission has put forth recommendations for policies that comprehensively address various SDOH, such as household financial security and housing stabilization.

By championing advocacy, fostering innovation, and forging strategic partnerships, the Commission has achieved significant milestones in relation to the suicide rates in the state. They have established a robust infrastructure for suicide prevention, intervention, and postvention that offers crucial support to individuals, families, and communities.

[40] https://health.gov/healthypeople/objectives-and-data/browse-objectives/mental-health-and-mental-disorders/reduce-suicide-rate-mhmd-01
[41] https://www.cohealthdata.dphe.state.co.us/chd/Resources/pubs/Suicide%20in%20Colorado%20COVDRS%20Health%20Watch.pdf

One notable impact can be traced back to the Commission's inception in 2014. At that time, it used the existing unified crisis system as the foundation for a pilot project designed to extend outreach and support to individuals transitioning from EDs after a suicide attempt or mental health crisis. Initially involving 7 hospitals, the program has grown to include 73 participating hospitals as of 2023.[42]

HHS – Tenant-Based Housing Voucher Programs

In 1996, HHS assembled the Community Preventive Service Task Force (CPSTF) to create evidence-based guidelines for community health enhancement and disease prevention. CPSTF found that the societal benefits of tenant-based housing voucher programs far outweigh their costs. These programs are especially beneficial to families with young children residing in public housing. They offer pre-move counseling and help families move to neighborhoods with more opportunities. By providing this access to low-income households, these programs address crucial SDOH and advance health equity.

The following statistics highlight the evidence supporting the impact of tenant-based housing voucher programs on health outcomes.[43]

- Increase of 7.9 percent in the number of adults who rated housing conditions as excellent or good
- Decrease of 35.5 percent in housing insecurity
- Decrease of 4 percent in the number of adults who reported one of five chronic conditions
- Decrease of 3.4 percent in the number of adults with a mental health condition
- Decrease of 1.6 percent in youth asthma-related ED use
- Decrease of 4.1 percent in the number of adults with unmet medical needs

Oregon – Health, Social, and Medical Complexity

The Center of Excellence on Quality of Care Measures for Children with Complex Needs (COE4CCN) defines "social complexity" as "a set of co-health outcomes or an indirect impact by affecting a child's access to care and/or a family's ability to engage in recommended mental health treatments."[44] This use case applies work done by the Oregon Pediatric Improvement Project (OPIP) that is focused on building an evidence-based collection of data sets to measure social complexity for children ages 0 to 17. Social complexity is paired with "medical complexity" from clinical information to establish an overall "health complexity."

The State of Oregon's social complexity factors include 12 data sets from existing systems. [45] Social complexity considers child/family factors, such as the following:

- Extreme poverty
- Parent death
- Child and parent mental health services
- Child abuse or neglect
- Parent disability
- Foster care
- Parent incarceration
- Child and parent substance use services
- Potential language barriers

[42] https://coloradosun.com/2023/05/25/mental-health-follow-up-project/
[43] https://www.thecommunityguide.org/findings/social-determinants-health-tenant-based-housing-voucher-programs.html#tabs-1-2
[44] https://oregon-pip.org/area-of-focus/engaging-health-complexity/
[45] https://innovations.bmj.com/content/bmjinnov/7/1/18.full.pdf

Appendix C: Prioritization Method for Future Data Sources

This appendix describes the methodology used to assign a potential priority designation to the future data sources listed in the Future Data Sources section of this SDOH Data Governance Plan.

First, the AHS SDOH project team provided insights on essential data sources from the State of Vermont that are crucial for supporting initiatives related to SDOH. Second, since these data sources can span several SDOH subdomains, an index was created to assign a number to each of the subdomains for easier analysis. Table 7 shows those index numbers for each subdomain. Those are then referenced in the "SDOH Subdomain(s)" column of Table 8 and Table 9.

Table 7: SDOH Subdomains and Associated Index Numbers

Index	SDOH Subdomain	Index	SDOH Subdomain
1	Housing Instability	**8**	Mental Health
2	Food Insecurity	**9**	Disabilities
3	Utility Help Needs	**10**	Physical Activity
4	Financial Strain	**11**	Transportation Problems
5	Employment	**12**	Family and Community Support
6	Education	**13**	Interpersonal Safety
7	Substance Use		

To determine the priority domains for AHS, the VCCI general assessment and NTM screening tools were reviewed for the subdomains addressed in their questions. Four common subdomains were identified:

- Mental Health (8)
- Family and Community Support (12)
- Substance Use (7)
- Interpersonal Safety (13)

Each data source that was prioritized by the AHS SDOH project team or contains one of these types of subdomain data is flagged as a potential priority source with an asterisk (*) at the end of the data source name.

Table 8: SDOH Domain Data Sources Internal to AHS for the Backlog

Data Source	Smallest Geographic Levels	Years Available	Update Frequency	SDOH Subdomain(s)	Description of Data
Health Statistics and Vital Records – VHHIS	County	2014-2021	Every 3-4 Years	1, 2, 4, 5	• DVH conducts periodic household surveys of Vermont residents • Measures uninsured rate/coverage sources for insured residents • Collects relevant demographic, income, and employment characteristics information

Data Source	Smallest Geographic Levels	Years Available	Update Frequency	SDOH Subdomain(s)	Description of Data
DCF – GA Emergency Housing Program (CommCare)	Person	Unknown	Varies	1, 4, 5	• Pilot program to consolidate screening questions • Survey data originally from the GA Emergency Housing Program (CommCare)
DCF – FSDNet/ SSMIS*	Person	Unknown	Varies	8, 12, 13	• Web-based platform in which Family Services Workers complete case documentation, such as case notes • FSDNet communicates with SSMIS (case management system that contains all case related information)
DCF – Reach Up/Reach First	Person	Unknown	Varies	4, 5	• Eligibility data • Includes household income and living expenses
DCF – 3SquaresVT	Person	Unknown	Varies	1, 2, 3, 4, 5	• Household need data over time • From the Economic Services Division
DOC – Risk-Based Assessment*	Person	Unknown	During Intake	7, 8, 12	• Currently collecting risk assessment surveys, including SDOH and interventions data
Vermont Open Geodata Portal	Census Tract, County	Varies	Annually	2, 4, 11	• Openly available geodata • Topics: Economic, Transportation, Health, and Public Safety
Vermont Social Vulnerability Index (SVI)*	Census Tract, County	2016-2020	Every 2-4 Years	4, 5, 6 , 9, 11	• Looks at social vulnerability • Examines the resilience of communities when responding to or recovering from threats to public health

Table 9: Data Sources External to AHS for Future Inclusion in the Backlog

Data Source	Smallest Geographic Levels	Years Available	Update Frequency	SDOH Subdomain(s)	Description of Data
Vermont Department of Labor*	Individual	Unknown	Monthly	5	• Unemployment insurance wage data* provides a valuable indicator of economic status • Unemployment insurance claims data can be an indicator of a disruption in economic status
VCIC	Census Tract, ZIP Code	Unknown	Monthly	13	• Crime activity data • Reported to the FBI and can be viewed through the public portal or received internally

Data Source	Smallest Geographic Levels	Years Available	Update Frequency	SDOH Subdomain(s)	Description of Data
Agency for Health Research and Quality (AHRQ)*	County, ZIP Code, Census Tract	2009-2020	Annually	1, 2, 4-9, 11, 12	• Makes it easy to find a range of well-documented, readily linkable SDOH variables across domains without having to access multiple source files • Facilitates SDOH research and analysis
HCR – CMS AHEAD Model	Individual	TBD	TBD	TBD	• Builds upon the Vermont All-Payer ACO • Focuses on whole-person care, including social needs
U.S. Census Data	Census Tract, ZIP Code, County	2000-2020	Every 10 years	1, 4, 5, 6, 12	• Publicly available data • Spans 130 surveys and programs
USDA – Food Atlas	County, FIPS	2011-2016	Unknown	2, 4, 10	• Food environment factors interact to influence food choices and diet quality • Includes store/restaurant proximity, food prices, food/nutrition assistance programs, and community characteristics
U.S. HUD – LAI	County, FIPS, Census Tract	2017-2023	Annually	1, 11	• Provides combined cost of housing and transportation data
CHDR	Census Block Group	2015-2021	Unknown	1, 4, 5, 6	• Area Deprivation Index (ADI) allows for rankings of neighborhoods by socioeconomic disadvantage in a region of interest (e.g., at the state or national level)
OEPS*	Census Tract, ZIP Code, County	Varies by type of data from 2010-2022	Varies by Source	1, 5, 6, 7, 9, 10, 12	• Free, open-source data warehouse • Centered on the multi-dimensional risk environment impacting opioid use and health outcomes • Focuses on justice communities across the United States
County Health Rankings*	State, County	Varies by Source	Varies by Source	1, 4, 5, 6, 7, 11, 12	• Models the various factors which contribute to health • Includes physical, social, clinical, and health behaviors