Health Information Exchange Strategic Plan

2023-2027 Plan *(2023 Update)*

Submitted: November 1, 2023

Submitted by the Agency of Human Services

18 V.S.A. § 9351(a)(1) The Department of Vermont Health Access, in consultation with the Department's Health Information Exchange Steering Committee, shall be responsible for the overall coordination of Vermont's statewide Health Information Technology Plan. The Plan shall be revised annually and updated comprehensively every five years to provide a strategic vision for clinical health information technology.

Contents

Key Terms

Advanced Planning Document (APD) – A brief written plan of action that requests the Centers for Medicare & Medicaid Services (CMS) to accomplish the planning activities necessary for a state agency to determine the need for, feasibility of, projected costs and benefits of an information system or services acquisition, plan the acquisition of information system equipment and/or services and to acquire information necessary to prepare an Implementation Advance Planning Document (IAPD).

All Payer Claims Database (APCD) – Are databases that include data on health insurance claims which can include medical claims, pharmacy claims, dental claims, and eligibility and provider files collected from private and public payers[1].

Application Planning Interface (API) – APIs are mechanisms that enable two software components to communicate with each other using a set of definitions and protocols.

Center for Disease Control and Prevention (CDC) – The CDC is one of the operating components of the Department of Health and Human Services. Their mission is to serve as a data-driven service organization that protects the public's health[2].

Centers for Medicare & Medicaid Services (CMS) – CMS combines the oversight of the Medicare program, the Federal portion of the Medicaid program and State Children's Health Insurance Program, the Health Insurance Marketplace, and related quality assurance activities.

Comprehensive Primary Care Plus (CPC+) is a multi-payer advanced primary care medical home model that was launched by CMS in 2017. It uses a combination of clinical and claims data to track and measure the performance of participating practices and to inform payment adjustments.

Data at the Point of Care (DPC) – Is a pilot program run by CMS that enables providers to deliver high quality care to Medicare beneficiaries by helping fill in the gaps in their patient's history by providing Medicare claims data at the point of care.

Data Governance – Data governance is a system of decision rights and accountabilities for information-related processes, executed according to agreed-upon protocols which describe who can take what actions with what information and when, as well as under what circumstances, using what methods. It clearly identifies the roles and responsibilities of those who take part in those processes and how they should interact.

Data Integration – Data integration is the process of combining data from different sources into a unified view or format.

Electronic Health Records (EHR) – a digital version of a patient's paper chart. EHRs are real-time, patient centered records that make information available instantly and securely to authorized users.

Fast Healthcare Interoperability Resources (FHIR) – a national standard for interoperability designed to enable health data, including clinical and administrative data, to be quickly and efficiently exchanged.

Health Data Utilities (HDU) – Are statewide entities that combine, enhance, and exchange electronic health data across care and services settings for treatment, care coordination, quality improvement, and

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[1] All-Payer Claims Databases | Agency for Healthcare Research and Quality (ahrq.gov)

[2] About CDC | About | CDC

public and community health purposes.

Health information – Information created during care delivery and/or in a social service setting which supports coordination of care, reimbursement, public health and quality reporting, analytics, and the policy and governance surrounding management of the healthcare system.

Health information exchange (HIE) verb – The action of appropriate and confidential sharing of health information across facilities, organizations, and government agencies supporting treatment, payment, and healthcare operation activities according to national standards. HIE is often used as shorthand for programs, tools, and investments that help aggregate and exchange health information.

Health Information Exchange (HIE) noun – An organization that collects health information electronically, manages it, and makes it available across the healthcare system. There is at least one HIEin almost every state in the nation, and HIEs can offer a variety of services. In Vermont there is one HIE, referred to as the Vermont Health Information Exchange (VHIE), which is operated by Vermont Information Technology Leaders (VITL).

Health Information Technology for Economic and Clinical Health (HITECH) – The Health Information Technology for Economic and Clinical Health (HITECH) Act, enacted as part of the American Recovery and Reinvestment Act of 2009, was signed into law on February 17, 2009 to promote the adoption and meaningful use of health information technology. This Act expired in 2021.

Health System – A "system" can be understood as an arrangement of parts and their interconnections that come together for a purpose. A health system has many parts. In addition to individuals and families, health providers, health services organizations, pharmaceutical companies, government, and other organizations play important roles. The interconnections of the health system can be viewed as the functions and roles played by these parts. The health system includes all activities focused on promoting, restoring, and maintaining health.[3]

Implementation Advance Planning Document (IAPD) – A written plan of action requesting to acquire and implement information system services and/or equipment from Centers for Medicare & Medicaid Services.

Information Technology (IT) – A broad professional category covering functions including building communications networks, safeguarding data and information, and troubleshooting computer problems.

Office of the National Coordinator for Health Information Technology (ONC) – ONC is the principal Federal entity charged with coordination of nationwide efforts to implement and use the most advanced health information technology and the electronic exchange of health information. ONC is at the forefront of the administration's health IT efforts and is a resource to the entire health system to support the adoption of health information technology and the promotion of nationwide, standards-based health information exchange to improve healthcare. ONC is organizationally located within the Office of the Secretary for the U.S. Department of Health and Human Services (HHS).

Operational Advanced Planning Document (OAPD) – Used to request funding for maintenance and operations from the Centers for Medicare & Medicaid Services of information systems when no major development or enhancements are being done.

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[3] World Bank. (2007). *Healthy Development: The World Bank Strategy for Health, Nutrition, and Population Results.* Washington, DC. World Bank. License: CC BY 3.0 IGO.

Outcomes-Based Certification – For all systems that comprise the Medicaid Enterprise System (MES), the Streamlined Modular Certification (SMC) approach to Outcomes-Based Certification (OBC) is designed to: demonstrate measurable improvements to a State's Medicaid program. This is achieved through data collection and testing to enable operational reporting of performance and functionality. OBC also reduces the burden on states and CMS during the certification process without compromising CMS's responsibility to ensure systems satisfy all requirements.

Request for Proposal (RFP) – A request for proposal is a document that solicits a proposal to potential suppliers / vendors through a bidding process by an entity (or government agency) interested in procuring a service or commodity.

Social Determinants of Health (SDoH) – Social determinants of health are nonmedical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life[4].

Total Cost of Care (TCoC) – The process of holding states accountable for quality and population health outcomes, while constraining costs of healthcare services delivered in a state or specified sub-state region. As applied by the CMS Innovation Center, this process takes place across all healthcare payers, including Medicare, Medicaid, and private health insurers and plans.

Unified Health Data Space – Vermont's Health Information Exchange has evolved from a "first generation" HIE which was focused on sending and receiving clinical records to a "second generation" HIE with a more robust assortment of data types and services offered. With this transition and with the completion of the technology work, the ecosystem of the health information exchange is referred to as the Unified Heath Data Space. As such, we will no longer be referring to Collaborative Services and instead will use the term Unified Health Data Space. This more accurately captures the second-generation function and needs of the HIE and as such will be used throughout this plan when referring to the ecosystem of the HIE.

United States Core Data for Interoperability (USCDI) – is a national standard set of health data grouping and elements for nationwide interoperable health information exchange.

Value-Based Care (VBC) – Designing care so that it focuses on quality, provider performance and the patient experience. Value-based care is a term that Medicare, doctors, and other healthcare professionals sometimes use to describe healthcare that is designed to focus on quality of care, provider performance and the patient's experience. The "value" in value-based care refers to what an individual values most. In value-based care, doctors and other healthcare providers work together to manage a person's overall health, while considering an individual's personal health goals.

Vermont Information Technology Leaders (VITL) – VITL is the legislatively designated operator of the Vermont Health Information Exchange (sometimes written VHIE and pronounced Vee-high), a secure infrastructure that gives healthcare organizations in Vermont the ability to electronically share and access their peoples' health information to improve the quality, safety, and cost of care.

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[4] Social Determinants of Health at CDC | About | CDC

A note on the name of this plan: 18 V.S.A. § 9351 calls for a Health Information Technology Plan which "shall include the implementation of an integrated electronic health information infrastructure for the sharing of electronic health information among healthcare facilities, healthcare professionals, public and private payers, and patients." The term *Health Information Exchange* describes the act of sharing health information, often electronically, while the term *Health Information Technology* is a broad term that describes the technical capabilities and equipment an individual or organization might use to meet any variety of health-related needs. Therefore, to best align with the focus of this plan to provide a transparent view of the State's health information exchange needs and challenges, this plan is hereafter referred to as the Health Information Exchange Plan, or the HIE Plan for short.

Executive Summary

The plan is governed by 18 V.S.A. § 9351 which defines criteria and content that need to be included in the plan. This plan is outcome driven, with achievable goals focused on meeting the needs of each stakeholder – people, providers, payers, public health, and policy makers. The plan update is comprised of four main inputs. These inputs include the following: HIE Steering Committee Strategy Planning Session; recommendations from Briljent, the consultant who worked on the HIE Data Strategy and Data Governance; alignment with the Federal Health Information Technology Plan; and current year accomplishments. It is important to note as stated in legislation, the plan is to be revised annually to provide a "strategic vision", 18 V.S.A. § 9351(a)(1). Required components in the plan per legislation are included. As outlined in the HIE Steering Committee charter and in 18 V.S.A. § 9351(a)(3)(A), AHS, in consultation with the HIE Steering Committee, is responsible for administering the plan, which includes designating VITL to operate the HIE, 18 V.S.A. § 9352(c)(1), and overseeing the implementation of the HIE, 18 V.S.A. § 9351(a)(3)(B), the development of its standards and protocols, 18 V.S.A. § 9351(a)(3)(C), and the manner in which it is operated, 18 V.S.A. § 9352(a)(3)(B).

There are four HIE goals that underpin the strategy.

HIE Goals

1. **Create One Health Record for Every Person** – Support optimal care delivery and coordination by ensuring access to complete and accurate health records.
2. **Better Health Outcomes** – Promote health and wellness for individuals and communities.
3. **Improve Healthcare Operations** – Enrich healthcare operations through data collection and analysis to support quality improvement and reporting with the goal of reducing healthcare costs and provide insight to improve the delivery and experience of care.
4. **Use Data to Enable Investment and Policy Decisions** – Bolster the health system's ability to learn and improve by using accurate, comprehensive data to guide investment of time, labor, and capital, and inform policy making and program development.

As the HIE has matured and developed, it has grown from a first generation HIE, focused on sending and receiving clinical data, to a unified health data utility. A health data utility is a statewide entity that combines, enhances, and exchanges electronic health data across care and services settings for treatment, care coordination, quality improvement, and public and community health purposes. Health Data Utilities have emerged as an industry standard best practice for HIEs. Health Data Utilities provide the capability for essential functionality of health information exchange across the healthcare system while also providing the capability for people to engage with their health information, enhances public health responses, keeping communities healthier and safer, and providing opportunities to manage healthcare with an eye to improved outcomes.

The plan will highlight the current year's accomplishments and strategic vision. The State has funding, staffing, and VITL capability for 2024 items that are part of this HIE Strategic Plan. The HIE Strategic Plan is aligned with the Office of the National Coordinator for Health Information Technology (ONC) approach for HIEs. As such, there are four components that work in concert with each other and contribute collectively to the success of the HIE. These four components include: funding, governance, policy, and technology.

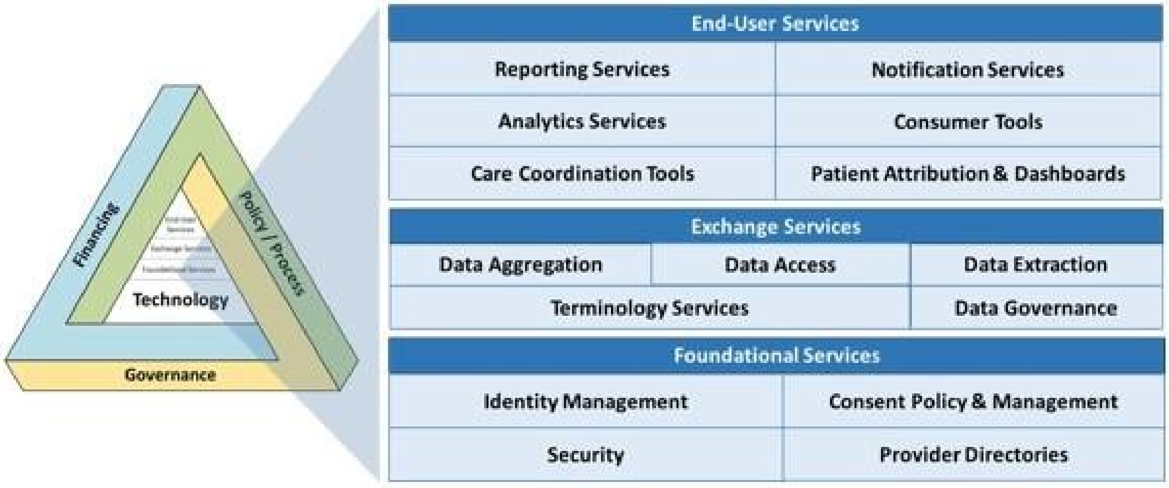

Figure 1: HIE Ecosystem - The Components

Updates

Funding: As mentioned in last year’s HIE Strategic Plan, Vermont’s HIE had a significant accomplishment, as it was one of the first states in the country to achieve CMS Certification. As a result of this certification, Vermont’s HIE is eligible for funding from the Federal Government’s Medicaid Management Information System (MMIS). As such, Vermont’s HIE continues to be in strong financial standing. The balance of the funding is from the State providing matching dollars as required. These matched State dollars are derived from the health information technology fund (which is created through a portion of the healthcare claims tax) or from grants. Provided the healthcare claims tax is renewed, Vermont’s HIE financial outlook is strong. To continue to strengthen the HIE’s financial position there is one focus item from the Agency of Human Services, specifically ensuring maintenance and operations activities are cost competitive, particularly as the scope of ongoing work is expanded as data and capabilities are expanded. The Agency of Human Services will continue to work closely with VITL to understand the organization’s desire to diversify the funding streams in future years.

2023: Financial outlook continues to remain strong.

2024: Planned activities.

1. Focus on cost competitiveness for maintenance and operations (M&O) costs (new from last year’s five-year strategic plan).
2. Ongoing discussions to support VITL’s desire to diversify their funding model (targeting 2025).

Data Governance: As committed in last year’s strategic plan, significant progress was made in the data governance space. The HIE Data Governance Council was formed, structure established, charter established, and monthly cadence met in 2023. Domain teams are part of the structure, and as such, there were two domain teams that were formed and kicked off this year. This included the following domain areas: 42 CFR Part 2 (which focuses on confidentiality of substance use disorder patient records) and Social Determinants of Health. A major accomplishment was the completion and approval of the 42 CFR Part 2 data governance for the HIE.

During last year's strategic plan submission, the Green Mountain Care Board (GMCB) requested consideration of the HIE Data Governance Council to host open meetings (meetings open to the public). As such, the HIE Data Governance Council discussed this request and voted to host open meetings with a commitment from the council to develop the structure on how meetings will be conducted and how feedback from the public will be thoughtfully considered and incorporated. The content of the data governance work is available on our website at: healthdata.vermont.gov

2023: Many accomplishments occurred in the HIE Data Governance space, which include:

1. Formation, structure, and ongoing operations of HIE Data Governance Council.
2. Formation and completion of 42 CFR Part 2 domain data governance.
3. Formation and ongoing design of Social Determinants of Health data governance.
4. Bi-State provided health data literacy education to their community health centers and VITL continued its commitment to provide patient education.
5. HIE Data Governance Council plans to host open meetings starting in January 2024.

2024: Planned activities

1. Complete the design of Social Determinants of Health (SDoH) Data Governance.
2. Ongoing operations to continue to provide health data literacy education to patients and expand health data discussions to the provider community.
3. Ongoing operations of the HIE Data Governance Council.

Policy/Process: There are six statutes that relate to the HIE. The HIE plan is aligned to support these laws as well as Federal laws, rules, and regulations. With Vermont's current HIE structure and future enhancements, it is well positioned to assist in addressing the health equity needs across the state and within communities. From a public health and policy position, the HIE can provide data to address the unique needs of the underserved and disadvantaged individuals who disproportionately carry the burden of severe chronic diseases, mental health needs, and socioeconomic barriers that challenge health outcomes, by changing how we develop and use digital technology and data. Health Information Exchanges play a key role in achieving these goals.

From a strategic perspective, there are key items the HIE program will focus on over the course of the next few years. These include continuing to diversify the data sets in the HIE – clinical, claims, social determinants of health, public health, and person generated data. This supports the sustainability of the HIE and the HIE as a health data utility.

2023: Ongoing support and implementation of policies.

1. Per Act 167, included in this strategic plan is a recommended approach for claims data integrated into the HIE.
2. To support 18 V.S.A. § 1129, ongoing implementation of bi-directional immunization data is input directly into providers' EHRs through the VHIE. This has received very positive feedback from providers. As such, the model of imbedding into EHRs will be more widely applied.
3. Engagement with consultant on developing a strategic roadmap for integrating data from the Vermont Department of Health (VDH) data into the HIE. This aligns with Federal direction through CDC's work with departments of public health and focus on health equity and

population health.

4. All Designated Agencies (DA) that provide a variety of services, which include substance use disorder and mental health support, are now connected to the HIE. This is a major milestone.
5. Following the changes to how reproductive and gender affirming care data are being used in other States, and Vermont's passage of Shield Laws Act No. 14 (Adj. Sess.);[5] 2023, Act No. 15 (Adj. Sess.).[6] - earlier this year, the HIE Steering Committee agreed upon an approach to participate in exchange of data through national networks for treatment purposes that allows VITL to enable Vermont providers and neighboring state providers who request information from the national data exchange through eHealth Exchange to access data on the VHIE. This was presented to and approved by the Green Mountain Care Board in May 2023, and is reflected in Appendix A.

2024: Planned activities

1. Implement recommendations from the Vermont Department of Health-HIE Integration Plan. Continue to embed data into EHRs as appropriate.
2. Engagement with consultant on developing a strategic roadmap for social determinants of health. This aligns with the Federal direction on treating the "whole person"[7].
3. Provide incentive payments to providers to connect more of the health system electronically through moving from paper charts to EHRs and connecting them to HIE (this work item is known as Medicaid Data Access and Aggregation Program (MDAAP)).
4. Establish a subcommittee to scope, define, and make incremental improvements on data completeness in the HIE. This can include the completeness of EHR records for certain data elements and robustness of data types available.
5. Initial phases of scoping, including gathering requirements for an advanced analytics platform.
6. Initial phases of scoping and gathering requirements for a future procurement of a care coordination and referral platform with a broad stakeholder group.

Technology:

While many core components to the fundamental HIE technology stack are in place, the HIE will continue to require enhancements to keep up to date. As outlined in 18 V.S.A. § 9351 (b)(6), the Unified Health Data Space is well positioned to ensure reuse of technology to make the most efficient use of resources. Per the statute, the HIE will: "incorporate the existing healthcare information technology initiatives to the extent feasible in order to avoid incompatible systems and duplicative efforts"[8]. Some of these include creating and applying an analytics layer to best optimize the data usability with appropriate role-based access; planning for ease of use through applying single sign on capability; and ensuring bidirectionality of data flow as it aligns with Federal and State laws and data security guidelines.

2023: Ongoing successful operations.

1. On track to achieve goal of ~135 new connections in 2023. This represents a 10% increase year-to-year in connections to the HIE.
2. Ongoing successful maintenance and operations of the HIE.

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[5] No. 14. An act relating to civil and criminal procedures concerning legally protected health care activity

[6] No. 15. An act relating to access to legally protected health care activity and regulation of health care providers.

[7] CMS Behavioral Health Strategy | CMS

[8] 18 V.S.A. § 9351 (b)(6)

2024: Planned activities

1. Initial phases of scoping and gathering requirements for a future statewide Provider Directory (new from last year's five-year strategic plan).
2. Foundational technology improvements to enable national standards for application programing interface (API) capability. This creates the foundation for future technological enhancements.
3. Discuss options to provide support to smaller health practices / rural providers for their health information technology needs. (New from last year's five-year strategic plan).

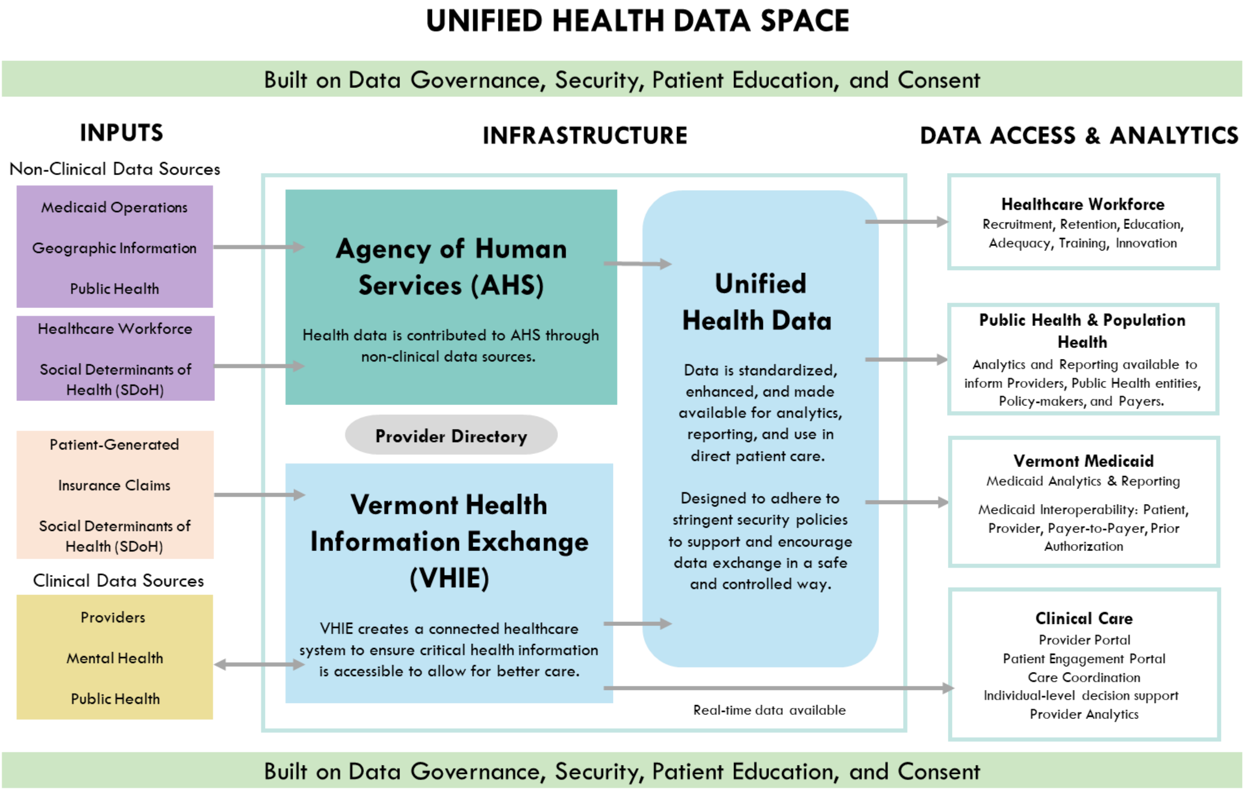

Figure 2: Vermont's Unified Health Data Space Model

2023 Accomplishments

Goal	Current Status (Oct 2023)	Outlook for Dec 2023 Status	On Track
Establish Data Governance for each data type and stakeholder use of it			Yes
HIE Data Governance	100%	100%	Yes
Part2 Data Governance (domain)	100%	100%	Yes
Social Determinants of Health Data Governance (domain)	10%	30%	Yes
Focus on clinical data (completeness, quality, and standardization)			Yes
Data Standardization	70%	100%	Yes
Medicaid Data Access and Aggregation (MDAAP) Program Design and Planning	80%	100%	Yes
Funding Structure			Yes
Cost Benchmarking Analysis	100%	100%	Yes
Action Plan to implement Recommendations	80%	100%	Yes
Establish new / additional interfaces to increase the richness of data.			Yes
Provider connections/interfaces	90%	100%	Yes
Part 2 Data - all Designated Agencies are connected to the HIE	50%	100%	Yes
Development work to start for HIE to serve as the Medicaid Data Warehouse			No
VITL to be operator of Unified Health Data Space (data warehouse)			Procurement
Enhance accessibility for Stakeholders			Partial
Stakeholder access expanded through existing VITL data warehouse	0%	0%	No
Application Program Interface (API) for access to data	50%	65%	Yes
Identify two use cases for SDoH and enable end to end implementation of it.			Partial
Social Determinants of Health Data Governance Strategic Roadmap	10%	30%	Yes
Oregon Pediatric Improvement Project and Social Autopsy Implementation - delayed data warehouse	10%	10%	No
Integrate Department of Health data into the HIE			Yes
Bi-directional Exchange Pilot	100%	100%	Yes
VDH-VHIE Integration Strategy	75%	100%	Yes

Table 1: 2023 Accomplishments

Strategy: Funding

Update: In 2024 there will be a focus on a cost competitive structure for maintenance and operations of the HIE. The goal is to position the HIE to remain cost competitive as the scope and scale of work increases. The actions associated with this are: ensuring alignment of VITL team members on the necessary technical and data management activities and projects; ensuring new and renewing contracts are negotiated at competitive rates; and finding opportunities to build more technical competency in-house at VITL to reduce the dependency on contractors.

The Agency of Human Services will continue to evaluate maintenance and operations (M&O) costs to contain costs as new capabilities are added. The reason for this is there are known M&O costs increases which include: each year interfaces and contracted projects transition to maintenance and operations mode; cyber threats regularly shift and grow, leading to increases in security costs; increase in cybersecurity insurance costs; and potential increases to contractually commit to a 99.9% uptime of operations (vs. the contractual 94% uptime). These known M&O future costs are the reason it is critically important to focus on cost competitiveness. This will help manage the M&O cost increases year to year, which will be important for HIE financial sustainability.

Strategy: Governance

Update: There was significant work and progress in the data governance space in 2023. There will be three key initiatives in 2024 related to data governance.

1. Complete the design of SDOH Data Governance.
2. Continued operations to provide health data literacy education to patients and expand health data communications to the provider community.
3. Ongoing operations of the HIE Data Governance Council

Data Governance: In 2024 the HIE will continue the ongoing operations of the HIE Data Governance Council. Ongoing data governance is indispensable for the HIE because it ensures the reliability, accuracy, security, and usability of the data year after year. Health data is dynamic, subject to constant updates and additions, and changes as patients receive care from various providers. Data governance processes must be responsive and adaptable to respond to the evolving landscape. Healthcare regulations and standards also evolve, necessitating continuous compliance monitoring and adjustments to data handling practices. Moreover, as healthcare technologies advance, new data sources and formats emerge, demanding ongoing governance efforts to integrate, standardize, and secure these diverse data types. By continually upholding data governance practices, the HIE can maintain data quality, protect patient privacy, and uphold the trust of both patients and healthcare providers in the long term. Further information can be found at: https://healthdata.vermont.gov/vermont-health-information-exchange-data-governance

Health Data Education: One of the primary areas of focus in the digital healthcare domain is enhancing digital health data awareness for providers and patients. Addressing the data literacy issue can unlock the full potential of digital health data, thereby enriching the quality of care, and patient empowerment.

Through a health equity lens, it is particularly crucial that Vermonters possess the skills to access, comprehend, analyze, and utilize their data to make informed health choices. For healthcare providers it is equally important to understand the HIE data. The HIE believes patients are at the center of their health data and should be able to make decisions about how their health data is used. By integrating digital health data literacy into health data governance and outreach initiatives we can ensure that the digital transformation of healthcare is both inclusive and equitable. This involves harnessing Health Information Exchange access portals and other outreach platforms as tools for education and empowerment, utilizing them to build a better understanding of user needs. Furthermore, establishing Key Performance Indicators (KPIs) and measurable benchmarks will provide a roadmap for progress, ensuring that our initiatives are impactful and accountable. These efforts will pave the way for true digital inclusion, fostering shared decision-making, and ultimately reducing disparities in healthcare delivery in Vermont.

Strategy: Process/Policy

Update: Act No. 167 directs the HIE Steering Committee to include a VHCURES data integration strategy in its 2023 HIE strategic plan. The VHCURES data set is Vermont's All-Payer Claims Data (APCD). This includes data from Medicaid, Medicare, and commercial payers.

> Sec. 4. HEALTH INFORMATION EXCHANGE STEERING COMMITTEE: DATA STRATEGY The Health Information Exchange (HIE) Steering Committee shall continue its work to create one health record for each person that integrates data types to include healthcare claims data; clinical, mental health, and substance use disorder services data; and social determinants of health data. In furtherance of these goals, the HIE Steering Committee shall include a data integration strategy in its 2023 HIE Strategic Plan to merge and consolidate claims data in the Vermont Healthcare Uniform Reporting and Evaluation System (VHCURES) with the clinical data in the HIE.

https://legislature.vermont.gov/Documents/2022/Docs/ACTS/ACT167/ACT167%20As%20Enacted.pdf

Why Pursue Linking Clinical and Claims Data?

The integration of clinical and claims data offers a transformative approach to improving healthcare. As demonstrated by the Comprehensive Primary Care (CPC+) Program, primary care providers (and other parts of the health delivery system) benefit greatly when given access to data showing a comprehensive view of the patient[9]. The outcomes from the western New York HIE (HEALTHeLINK) which participated in this program include:

- 24.1% reduction in admission rate
- 21% decrease in outpatient surgeries
- 32.7% shorter hospital stay duration (10.58 days vs. 15.72 days)

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[9] The Impact of Population Health Analytics on Health Care Quality and Efficacy Among CPC+ Participants

- 30.4% reduction readmission rate within 30 days post-discharge

As demonstrated above, a more comprehensive patient record supports the shift towards value-based care, promotes better health outcomes, and can lead to cost savings. It provides a more comprehensive view of patient health, informing more personalized and effective care.

Additionally, CMS's data at point of care program (DPC) advocates for the need to link clinical and claims data as it tries to "transform healthcare delivery by leveraging Medicare's Blue Button data to provide clinicians with access to claims data. The claims data will fill in information gaps for clinicians, giving them a more structured and complete patient history with information like previous diagnoses, past procedures, and medication lists."[10]

Finally, as experienced by Manifest MedEx[11], a California nonprofit health data network, "The business case for integrating claims and clinical data is clear. Providers, health plans, and patients all benefit from uniting these data sets. By partnering with a smart, secure, and collaborative health data network, providers and health plans can now access integrated claims and clinical data and more effectively transition to value-based care."

A sample of high-value use cases follows.

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[10] CMS Advances MyHealthEData with New Pilot to Support Clinicians

[11] Business case for integrating claims and clinical data

Use Case 1: Medication Reconciliation

Beneficiary: Healthcare Providers and Patients

Consider a patient who sees multiple providers for various health conditions. Each provider may prescribe different medications, leading to a complex medication regimen. Clinical data from each provider's EHR system provides information about the medications they prescribed. However, it does not provide information about medications prescribed by other providers or whether the patient is actually filling and taking the prescribed medications. This is where claims data comes in. Claims data provides information about all medications the patient is filling, regardless of the prescriber, and how often they are filling these medications, which can indicate whether they are taking the medications as prescribed. By integrating clinical and claims data, providers can conduct a more accurate medication reconciliation, identify potential drug interactions, and address medication adherence issues. For example, if the claims data shows that the patient is not regularly filling a prescribed medication, the provider can discuss this with the patient and address any barriers to medication adherence, such as cost, side effects, or misunderstanding of the medication instructions. [12, 13]

“Studies of health care costs and utilization associated with medication nonadherence frequently rely on claims data and usually focus on patients with specific conditions. It is estimated that 20-30% of U.S. prescriptions never get filled and that the lack of filling prescriptions caused about 125,000 deaths and cost the American health care system between $100 and $289 billion per year in the 2000s. A more recent study estimates that the annual cost of prescription drug-related morbidity and mortality because of nonoptimized medication therapy, including medication nonadherence, was $528.4 billion in 2016.

Our study results indicate that having complete medication initiations was associated with lower total and medical costs, concurrently and prospectively. In addition, having complete medication initiations was associated with lower likelihood of health care utilization concurrently and lower likelihood of having any ED visits prospectively. The medication initiation measure, a simple binary marker, can enable population health management programs—especially programs administered by health care providers that have access to both EHR and claims data—to advance targeting their population-level interventions toward subpopulations (e.g., patients with incomplete medication initiations) that can bring the highest savings[14].

Use Case 2: Preventative Screenings.

Beneficiary: Healthcare Providers, Patients, and Public Health

Consider a healthcare provider managing the care of a large patient population. One of the key

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[12] Electronic tools to support medication reconciliation: a systematic review, Sophie Marien 1, Bruno Krug 2 , Anne Spinewine 2

[13] Impact of incorporating pharmacy claims data into electronic medication reconciliation, Shobha Phansalkar 1, Qoua L Her 2, Alisha D Tucker 2, Esen Filiz 2, Jeffrey Schnipper 2, George Getty 2, David W Bates 2

[14] Integrating E-Prescribing and Pharmacy Claims Data for Predictive Modeling: Comparing Costs and Utilization of Health Plan Members Who Fill Their Initial Medications with Those Who Do Not, Hsien-Yen Chang 1, Hong J Kan 1, Kenneth M Shermock 2, G Caleb Alexander 3, Jonathan P Weiner 4, Hadi Kharrazi 5

aspects of population health management is ensuring that patients receive appropriate preventative screenings, such as mammograms for breast cancer, colonoscopies for colorectal cancer, and blood glucose tests for diabetes. Claims data provides rich information about preventative screenings that a patient has received, regardless of the provider, and whether the screenings were covered by insurance. By integrating clinical and claims data, the provider can have a more comprehensive view of a patient's preventative care.

The provider can use the integrated data to identify patients who are overdue for preventative screenings and reach out to these patients to encourage them to get screened. This can lead to early detection of health issues, improved health outcomes, and lower healthcare costs associated with treating advanced diseases. On a larger scale, public health organizations can use the integrated data to monitor preventative screening rates in a population and develop targeted interventions to increase these rates. This can lead to improved population health outcomes and reduced healthcare costs associated with preventable diseases[15, 16].

Use Case 3: Population Health Management

Beneficiary: Healthcare Systems and Public Health

For example, consider a healthcare system that serves a large population of patients with hypertension. Clinical data provides detailed information about these patients' blood pressure readings, lifestyle factors, and treatments. Claims data provides additional information about diagnoses, healthcare utilization, such as frequency of provider visits, hospitalizations due to hypertension complications, and use of antihypertensive medications. By integrating these data sets, the healthcare system can identify trends and patterns, such as high rates of hospitalizations due to uncontrolled hypertension, and develop targeted interventions, such as patient education programs about the importance of regular office visits, blood pressure control and medication adherence. This not only improves the health of the patient population but also reduces healthcare costs associated with hypertension complications. The integration of claims and clinical data is required for the calculation of hybrid claims clinical HEDIS measures, where diagnostic information is derived from claims and observation results are derived from clinical records, such as the percentage of patients with hypertension whose blood pressure is in control, or the percentage of patients with diabetes whose hemoglobin A1c (blood sugar indicator) test results are in poor control. Having such integrated data in the VHIE in identified form would allow for more precise population drilldowns and more targeted interventions by healthcare providers[17, 18].

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[15] Electronic Health Records vs Medicaid Claims: Completeness of Diabetes Preventive Care Data in Community Health Centers, Jennifer E. DeVoe, MD, DPhil,1 Rachel Gold, PhD, MPH,2 Patti McIntire, BA:PPPM,3 Jon Puro, MPA-HA,3 Susan Chauvie, RN, MPA-HA,3 and Charles A. Gallia, PhD4

[16] Using electronic health records and claims data to identify high-risk patients likely to benefit from palliative care, Aixia Guo 1, Randi Foraker, Patrick White, Corey Chivers, Katherine Courtright, Nathan Moore

[17] Comparing Population-based Risk-stratification Model Performance Using Demographic, Diagnosis and Medication Data Extracted From Outpatient Electronic Health Records Versus Administrative Claims, Hadi Kharrazi 1, Winnie Chi, Hsien-Yen Chang, Thomas M Richards, Jason M Gallagher, Susan M Knudson, Jonathan P Weiner

[18] Assessing the Population-Level Correlation of Medication Regimen Complexity and Adherence Indices Using Electronic Health Records and Insurance Claims, Xiaomeng Ma 1, Changmi Jung 2, Hsien-Yen Chang 1, Thomas M Richards 1, Hadi Kharrazi 3

Recommendation: To achieve the benefit of these use cases (among many others), a team was formed to evaluate the components of the VHCURES-HIE integration. This team met from May through October 2023 which included public meetings. The team was comprised of subject matter experts from the following organizations: Green Mountain Care Board, Blue Cross Blue Shield of Vermont, Vermont Office of the Healthcare Advocate, Bi-State Primary Care, Vermont Department of Health, Agency of Human Services, Agency of Digital Services, VITL, Vermont Association of Hospitals and Health Systems (VAHHS), and Vermont Program for Quality in Healthcare. Components that were considered included: feasibility, legal, policy, data privacy, security, sustainability, data quality, data governance, and the national landscape of claims data. The meeting materials can be found here: Vermont Health Information Exchange Data Governance | Health Data. This team identified substantial barriers to integrating the VHCURES data into the HIE. These barriers include:

- Green Mountain Care Board's interpretation of 18 VSA 9410.
  https://legislature.vermont.gov/statutes/section/18/221/09410
- Green Mountain Care Board's interpretation of Act 167 Section 4.
- Green Mountain Care Board's Administrative Rule, and internal data governance policies and procedures such as its Data Release Manual, and Data Linkage Policy.
- VHCURES data is 9-12+ months old, sometimes more[19].
- VHCURES does not have a consent process. Vermonters cannot opt-out of VHCURES claims data collection, use and disclosure[20].

Green Mountain Care Board documented these barriers in the following document from the October 3, 2023, public meeting:

(https://gmcboard.vermont.gov/sites/gmcb/files/documents/dgc_updates_10.3.2023.pdf)

As a result of the significant barriers and in combination with the national landscape, the Agency of Human Services (AHS) proposes the following approach to achieve the benefit of linking clinical and claims as requested in Act 167. The approach, while different than requested, ultimately should provide the same end benefit or better for Vermonters, Providers, Payers, the State and other Healthcare Stakeholders. To best serve the patients, providers, public health, and payers, AHS recommends a more sustainable and patient focused approach to integrating timely claims data in the HIE. There is currently work underway to integrate Medicaid claims data into the Unified Health Data Space. Over the next few years, this work should be expanded to include Medicare and Commercial Payers.

The national landscape provides the backdrop for the direction of claims data. Fewer than half the states have APCDs[21] and the ones that do exist are not interoperable with each other making data exchange difficult across states and reducing their utility on a national level. In addition, this lack of standardization adds to payer burden, especially for payers that support multiple states as they are required to support different nonstandard data formats for states' APCD.

Another challenge is the data in VHCURES is typically 9 to 12 months old, and in some cases more[22]. The use cases would have diminished value with data that is nearly a year old especially when there could be

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[19] GMCB Data Governance Council Staff Updates, October 3, 2023, *page 12*

[20] GMCB Data Governance Council Staff Updates, October 3, 2023, *page 12*

[21] Realizing the Promise of All Payer Claims Databases, A Federal and State Action Plan, *Kevin McAvey*

[22] GMCB Data Governance Council Staff Updates, October 3, 2023, *page 12*

an option for more current claims data. [23, 24, 25, 26]

There is significant focus nationally, from ONC, CMS, and CDC on interoperability. The focus on interoperability has been applied to clinical data, public health data, and most recently claims data that support real time data exchange. There are two major standards for health data exchange: Fast Healthcare Interoperable Resources (FHIR) and United States Core Data for Interoperability (USCDI). These standards are currently in place and utilized by the Vermont HIE. FHIR provides the technical mechanics of data exchange and USCDI provides a standard data model so the data can be readily used by different entities. CMS has recently focused on bringing claims data into the fold for interoperability. There is currently a proposed federal rule for Payer-to-Payer Data Exchange API which defines the standard for data exchange (FHIR and USCDI)[27]. This proposed rule would require new payers to request patient data from the previous payers within one week of the start of coverage; this data exchange excludes cost information. Previous payers would have to provide the data within one day of receiving the request. Patient data must then be incorporated into the new payer's record about the patient. Patients will have the ability to opt-out of the Payer-to-Payer Data Exchange in the proposal rule. This proposed rule has an effective date of January 1, 2026. Directionally, the healthcare claims landscape is moving toward national standards and real time data exchange. In addition, CMS has been running a pilot project called 'Data at the Point of Care' which provides Medicare claims data made available to link with clinical data at the point of care for patient and provider benefit. CMS indicated that the timeliness of the adjudicated claims data is about 7-8 weeks and that the data is refreshed weekly.

Department of Health – HIE Integration: The Department of Health is working with a vendor to identify opportunities and develop a plan to integrate public health and HIE data and capabilities. This plan is expected to be finished in December 2023 and will include recommendations on the data to integrate along with specific strategies to accomplish the goal. The recommendations will be reviewed, collaboratively prioritized, and plans for implementation created as well as the appropriate data governance. Not all recommendations will be implemented in the first year, however, we expect to make progress towards leveraging investments and bringing public health into the unified health data space.

> **Background:** Public health registries are also eligible for CMS certification. While there are dedicated funding sources for Vermont's public health registries, certifying these systems may create an opportunity for Vermont to receive enhanced Federal funding. It is important to note that operation of the registries would have to comply with CMS guidance, such as integration with an HIE and use of existing Federal investments before certification could be obtained. Certification of public health data capabilities will be further explored as part of the process of developing a public health and VHIE integration strategy.
>
> In addition to integrating public health systems to the HIE, VITL will operate the data warehouse currently under procurement. This will include ingesting Medicaid claims into the HIE, leveraging the existing technology of the HIE and providing the data for the Medicaid analytics vendor for required reporting and analytics. Having the HIE consolidate data warehouse functions across the State aligns to 18 V.S.A 9351 (6).

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[23] BCBSA and AHIP Comments to State All Payer Claims Databases Advisory Committee

[24] Beyer Introduces National All-Payer Claims Database Act to Decrease Healthcare Costs

[25] National_all-payer_claims_database_act_of_2022

[26] APCD Common Data Layout

[27] Medicare-and-medicaid-programs-patient-protection-and-affordable-care-act-advancing-interoperability

Social Determinants of Health: Engagement with consultant on developing an implementable strategic roadmap for Social Determinants of Health. This aligns with the Federal direction on treating the whole person.

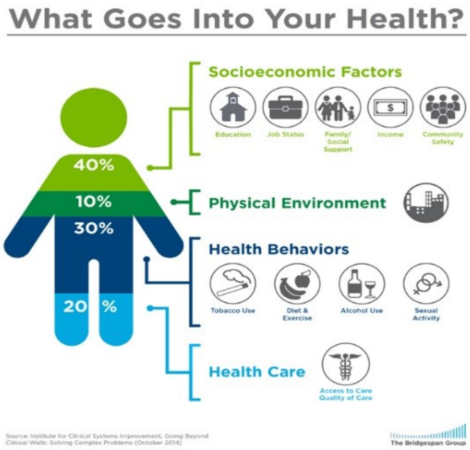

Image Source: The Institute for Clinical Systems Improvement, Going Beyond Clinical Walls: Solving Complex Programs (October 2014)

Background: Social Determinants of Health (SDoH)

The Healthy People 2030 initiative by the U.S. Department of Health and Human Services (HHS), designed to guide national health promotion and disease prevention efforts to improve the health of the nation, defines an overarching goal specifically related to SDoH: "Create social, physical, and economic environments that promote attaining the full potential for health and well-being for all."

Data is the key for building a robust and efficient Social Determinants of Health strategy, which is needed to address health and healthcare disparities and achieve health equity. CMS Framework for Health Equity 2022–2032 also identified Priority 1 as expanding the collection, reporting, and analysis of standardized data.

The HIE strives to improve our collection and use of comprehensive, interoperable, standardized individual-level demographic and SDoH data. As stated in CMS Framework for Health Equity 2022–2032, increasing our understanding of the needs of those we serve, including social risk factors and changes in communities' needs over time, gives us instruments to leverage quality improvement and ensure all individuals have access to equitable care and coverage.

Medicaid Data Access and Aggregation Program (MDAAP): MDAAP is an incentive program to provide financial incentives, technical assistance, and business supports to home and community-based providers who would like to digitize their health records and forge new connections directly interfacing with the HIE or viewing health data through VITL access.

In 2023, AHS hired a vendor to survey and conduct focus groups with home and community-based providers like mental health, substance use disorder treatment, and long-term services and supports providers within Vermont, as well as to gather knowledge from other states implementing similar programs. This work was drafted into a stakeholder evaluation and assessment, lending its insights into the MDAAP program design. MDAAP looks forward to immediately launching with instructional webinars and office hours to assist providers in applying for MDAAP with a ramping up of program activities in late 2023 and early 2024.

MDAAP consists of different tracks to help providers achieve different health information technology goals. The primary focus is on meeting providers where they are and helping them to meet milestones to increase data capacity and completeness, data sharing, and lessening provider burden.

Data Completeness: Data completeness can be assessed through the presence or absence of data elements in the EHR. In some cases, these are elements that are expected to be present, even if they are not needed for any specific task. In other situations, the elements examined are dependent upon the task at hand by determining whether the EHR data were complete enough for a specific purpose. Data completeness is the most commonly assessed dimension of data quality. Generally speaking, data completeness refers to whether or not a truth about a patient is present in the EHR.

Analytics:

Update: The analytics layer was discussed in last year's five-year strategic plan update with a start date of 2024. As such, the content from last year is consistent. In 2024, we will conduct initial phases of scoping and gathering requirements across a broad stakeholder group for an advanced analytics platform. This work from scoping and requirements gathering will likely take the majority of 2024. This analytics layer will be procured, with VITL operating as part of the unified health data space.

Background:

As the analytics platform will need to service a very broad user group spanning HIE stakeholders including payers, hospitals, mental health and substance use disorder Designated Agencies, providers, Federally Qualified Health Centers, Accountable Care Organizations, the Blueprint, long term care solutions, home health, public health, Green Mountain Care Board, the AHS Healthcare Reform office, and compliance reporting.

Adoption and utilization of the unified health data space will depend on the ease with which users can access the information they need. Providers will need a single sign-on that is integrated into their workflow. They will also look to have VHIE data available within their standard workflow and tools. Stakeholders will seek interactive dashboards to enable data analysis based on certain person characteristics, health, or geography. The ability to analyze and use the data (often called data literacy) from the unified health data space will vary across user groups. Strategic investments for technology for the HIE will involve acquiring and integrating modern, easy-to-use analytic tools to facilitate the effective use of the unified health data space, enabling staff without training to generate meaningful insights from the data. It will also be important to clearly communicate what tools and resources are available to users.

It will be important to present each stakeholder with data fields that will be useful and in a format that is meaningful. Enhancing ease of use for the consumers will elevate data literacy skills. Within each user group, it will be important to identify processes to simplify access to data based on role-based access. To ensure coordination and collaboration across all stakeholders, it is critical that data flows in both directions. That is, if a stakeholder contributes data to the unified health data space, they must be able to access data that aligns with their designated role, as well as Federal and State privacy laws. As such, data must be accessible to stakeholders that are contributing data to the warehouse, aligning with policies, laws, and data security guidelines.

Care Coordination and Referrals:

Update:

Care coordination and referrals were discussed in last year's five-year strategic plan update with a start date of 2024. In 2024, we will conduct initial phases of scoping, gathering requirements across a broad user group. This work of scoping and gathering requirements will likely take the majority of 2024. The care coordination platform will be part of the unified health data space. This care coordination platform will be integrated so it can send / receive clinical data in real time and embed it into providers EHRs. Part of the 2024 work will be to evaluate the landscape of care coordination and referral platforms in the state to either leverage existing tools or consider appropriate consolidation.

A care coordination and referral platform is a comprehensive system designed to enhance the coordination of care for individuals with complex healthcare needs. These platforms play a pivotal role in the domain of healthcare, particularly in the context of managing patients with chronic conditions or complex medical histories. At its core, a care coordination and referral platform act as a centralized hub that connects healthcare providers, care managers, community partners, and patients fostering efficient communication and collaboration.

Strategy: Technology

Update:

1. **Provider Directory:** Initial phases of scoping and gathering requirements for a future statewide Provider Directory (new from last year's five-year strategic plan).
2. **API Capability:** Foundational technology improvements to enable national standards for API capability. This creates the foundation for future technology enhancements Directory.
3. **Health Equity for Technology:** Discuss options to provide support to smaller health practices / rural providers for their health information technology needs. This is both in staffing and support for health information technology needs. This is a challenge due to the rural nature of Vermont (new from last year's five-year strategic plan).

Provider Directory: A Provider Directory is a centralized, comprehensive system that combines information about healthcare providers from across organizations. It contains essential information about each provider, such as their name, contact details, address, specialty, credentials, NPI number(s), and other relevant information. The HIE Steering Committee acknowledges there are various Provider Directories in the state. The goal is not to add another but to potentially consolidate/streamline/leverage the existing Provider Directors for a comprehensive one. Exploring the best approach will be part of the scope in 2024.

The Provider Directory will play a critical role within the HIE by serving as a central repository of accurate and up-to-date information about healthcare providers serving Vermonters. It allows authorized users such as physicians, nurses, and other healthcare professionals to quickly locate the appropriate providers involved in a patient's care. For example, if a patient is referred to a specialist, the referring physician can use the Provider Directory to find the specialist's contact information, facilitating more seamless communication and coordination of care. This helps to avoid errors, delays, and miscommunication that can occur when outdated or incorrect contact information is used.

Technology Enhancements and Application Programming Interfaces (APIs): Updated network infrastructure, in the form of new Application Programming Interfaces (APIs) and related services, will allow the HIE to operate in compliance with current Federal standards for health information exchange. Just as world wide web (https://www.) standards supported a more uniform and efficient way for people and organizations to search for and share information across the internet, current Federal standards have been developed to make it easier and more efficient for patients, providers, payers, and other healthcare stakeholders to request and share healthcare information while maintaining security and privacy. These API standards (per [45 CFR Section 170.215]) set common, nationwide expectations for how to structure healthcare data, how to transmit it for individual patients, how to transmit it for large populations of patients, what minimum core healthcare data all EHR systems are expected to share with authorized users, and the security methods to be used for requesting access to data, authenticating or verifying the identity of users, and providing access to the appropriate subsets of data. The goals of this work are that the new APIs will provide a standard and more efficient way for HIE stakeholders to exchange data and that they will enable patients to access their data electronically.

Health Equity: Technology assistance and support for rural/smaller providers. Rural healthcare providers and small practices often face significant challenges when it comes to supporting electronic connectivity within the overall health system. These challenges stem from several factors unique to their settings and resources.

Firstly, limited infrastructure and technology resources pose a hurdle. Small practices may lack the financial resources to invest in robust IT infrastructure. These limitations can hinder their ability to electronically connect with the greater health system overall.

Secondly, limited technical expertise and staff resources can impede electronic connectivity efforts. Rural healthcare providers and small practices may have a shortage of IT professionals with the necessary skills to implement and maintain EHRs. This shortage can result in slower adoption of technology and difficulties in troubleshooting technical issues. Moreover, smaller practices often have limited staff, allocating resources for training and ongoing IT support can be challenging.

In addition, financial barriers play a significant role. Rural healthcare providers and small practices often operate on tight budgets. The cost of maintaining, upgrading, troubleshooting and ensuring data security can be prohibitive. This exacerbates the health equity challenge rural providers face. As such, the HIE Steering Committee in 2024 would like to explore options to better support our rural providers in a sustainable way. This will involve collaboration from various entities and providers and government agencies at both the Federal and State level.

Strategy: Next Steps

How does the HIE Strategic Plan support Value-Based Care?

The HIE Strategic Plan provides a comprehensive framework that directly supports Value-Based Care (VBC) and the management of Total Cost of Care (TCoC). Here are specific examples:

1. Integration of Diverse Data Sets: The HIE plan emphasizes the integration of diverse data sets, including clinical, claims, Social Determinants of Health, and person-generated data which supports the goal of Value Based Care – improving health outcomes and reducing unnecessary healthcare costs. This comprehensive data collection is crucial for VBC as it provides a holistic view of a patient's health, enabling healthcare providers to deliver personalized and effective care. For instance, understanding a

patient's Social Determinants of Health can help providers address non-medical factors that impact health outcomes, such as housing or food insecurity. By integrating data sets, the provider can identify opportunities to improve care and reduce costs. This has been demonstrated by HEALTHeLINK, the HIE in western New York. Their HIE utilizes a tool called HEALTHeOUTCOMES which has real time clinical data and regional claims data for consented patients[28]. This comprehensive data 'allows practices to better identify trends in their practice instead of looking separately at disparate reporting from multiple data sources.'[29] For example, if the data shows that many patients are being hospitalized for preventable complications, the provider can implement strategies to improve disease management, focus on specific complications, and prevent hospitalizations. This not only improves patient health outcomes but also reduces healthcare costs, which can lead to achievements of quality and financial goals under the value-based care program.[30]

2. Analytics Layer Development: The plan includes the development of an analytics layer with role-based access for each stakeholder. This allows for the analysis of data based on certain person characteristics, health, or geography. Such data analysis can identify patterns and trends in healthcare delivery and outcomes, supporting decision-making in VBC. For example, analytics could reveal that a certain treatment approach leads to better outcomes for a specific patient population, guiding providers to adopt this approach and thus improving value.

3. Provider Directory Consolidation: This supports care coordination, a key aspect of VBC, by ensuring that healthcare providers have accurate and up-to-date information about other providers involved in their patients' care. A Provider Directory can be leveraged to advance patient-centered care by allowing patients to efficiently chose providers that meet their specific needs and preferences. This is in line with healthcare reform's goal of enhancing healthcare access. This can reduce duplication of services and ensure all providers are working towards the same health outcomes, thus managing the total cost of care.

4. Integration of Public Health Systems: The plan outlines the integration of public health systems into the HIE. This integration supports VBC by providing a more comprehensive view of population health and trends enabling effective interventions.

5. Incentive Payment Grants: The HIE plan includes providing incentive payment grants to providers to connect to the health system electronically. This can encourage providers to adopt electronic health records and other technologies that improve data sharing and coordination of care, both of which are key to VBC and managing the total cost of care.

In the following months, AHS with the HIE Steering Committee will build out an action plan for each 2024 Strategic Goal item from the below table and track progress.

Ongoing coordination across all stakeholders will support the implementation and operations of the HIE Strategic Plan. As always, operational updates will be communicated in the HIE Steering Committee meetings.

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[28] HEALTHeOUTCOMES – HEALTHeLINK (wnyhealthelink.com)
[29] WNY_Report2.pdf (milbank.org)
[30] Cutler DM, Ghosh K. The potential for cost savings through bundled episode payments. N Engl J Med. 2012 Mar 22;366(12):1075-7.

HIE Themes

GOAL	FOUNDATIONAL	VALUE BASED CARE MGT	FOCUS ON HEALTH EQUITY	CREATE 1 HEALTH RECORD FOR EVERY PERSON	BETTER HEALTH OUTCOMES	IMPROVED HEALTHCARE OPERATIONS	USE DATA TO ENABLE INVESTMENT AND POLICY DECISIONS
Ongoing support for **Data Governance.**	✓		✓				
Patient education and ongoing support of Health Data Literary.	✓		✓				
Focus on **data completeness, quality, and standardization.**	✓	✓	✓	✓	✓	✓	✓
Enable HIE to **adopt analytics** to empower individuals, address patients' full range of health needs, and facilitate better health outcomes for individuals and communities.	✓	✓	✓		✓	✓	✓
Focus on **cost** for maintenance and operations.	✓						
Capability for **care coordination and referral management.**		✓	✓		✓	✓	
Strategic Roadmap for **Social Determinants of Health**		✓	✓				
Integrate Dept of Health data into the HIE.			✓	✓	✓		
Explore options to provide **technical support** to **rural providers/smaller practices.**	✓		✓	✓		✓	
Ongoing Technology Enhancements: Promote portability of EHI through **standards-based APIs.**	✓						

Table 2: HIE Themes & Goals

Appendix A: Protocols for Access to Protected Health Information on VHIE

Protocols for Access to Protected Health Information on VHIE

Section 1 – Purpose

Upon approval by the Green Mountain Care Board, this addendum shall be incorporated into and become part of Vermont's Health Information Technology Plan (the "Plan"). Vermont law requires that the Plan include standards and protocols for the implementation of an integrated electronic health information infrastructure for the sharing of electronic health information among healthcare facilities, healthcare professionals, public and private payers, and individuals receiving care. In particular, 18 V.S.A. § 9351(a)(3)(B) requires that:

> *The Plan shall provide for each patient's electronic health information that is contained in the Vermont Health Information Exchange to be accessible to healthcare facilities, healthcare professionals, and public and private payers to the extent permitted under Federal law unless the patient has affirmatively elected not to have the patient's electronic health information shared in that manner.*

This addendum is intended to give effect to these provisions.

As required by statute, Vermont Information Technology Leaders, Inc. (VITL) has been designated to operate the Vermont Health Information Exchange (VHIE) in accordance with standards and protocols that are consistent with those adopted under the Plan.

Notwithstanding the annual review and approval of the HIE Plan as a whole, these Protocols shall remain in effect for the existence of the VHIE until superseded or modified with approval of the Green Mountain Care Board.

Section 2 - Definitions

"Consent" means an Individual's decision to permit access to the individual's Protected Health Information on the VHIE by participating healthcare organizations and by public or private payers for permissible purposes. No affirmative action is required from an individual to establish their consent. Individuals shall be considered to have given their consent until and unless the individual affirmatively opts out.

"De-identified" means that all identifying information related to a person as set forth in the HIPAA Privacy and Security Rules are removed from the Protected Health Information.

"Healthcare Operations" means any of those activities identified by Federal regulations at 45 C.F.R. § 164.501, as may be amended, including but not limited to, quality assessment and improvement, evaluations relating to the competence of treating providers or necessary administrative and management activities.

“HIPAA” means the Health Insurance Portability and Accountability Act of 1996, as may be amended, and its implementing rules promulgated in 45 C.F.R. Parts 160, 162, and 164, as may be amended.

“HIPAA Privacy Rules” means those privacy rules described in 45 C.F.R. Part 164, Subpart E, as modified and enlarged by the Health Information Technology for Economic and Clinical Health (HITECH) Act and any other subsequent amendments to the Rules.

“HIPAA Security Rules” means those security rules described in 45 C.F.R. Part 164, Subpart C, as modified and enlarged by the HITECH Act and any other subsequent amendments to the Rules.

“HITECH Act” means the Health Information Technology for Economic and Clinical Health Act of 2009, as may be amended, and its implementing rules promulgated at 45 C.F.R. Parts 160, 162, and 164, as may be amended.

“Medicaid State Plan” means that there is an agreement between a state and the Federal government describing how that state administers its Medicaid programs. It gives an assurance that a state will abide by Federal rules and may claim Federal matching funds for its program activities.

“Medical Emergency” means a condition that poses an immediate threat to the health of any individual and which requires immediate medical intervention. The term “Medical Emergency” specifically is intended to include an “Emergency Medical Condition” which is defined as a medical condition manifesting itself by acute symptoms of sufficient severity such that the absence of medical attention could reasonably be expected to result in (1) placing the health of the individual in serious jeopardy or (2) serious impairment to bodily functions or (3) serious dysfunction of any bodily organ or part.

“Opt-Out” means a Person’s affirmative election to withhold Consent, communicated to VITL through designated process.

“Participating Healthcare Organization” means the individual hospital, medical practice, physician practice, home healthcare agency or other healthcare provider who has entered into a VHIE Services Agreement. Healthcare Organization is either a recipient of Data or a supplier of Data, or both, with respect to Data available through the VHIE. The term “Participating Healthcare Organization” shall include all the individual providers and authorized staff employed or otherwise legally associated with the entity or organization.

"Part 2 Provider” means a Participating Healthcare Organization provider that has notified VITL that the organization or a unit or staff member within its organization, meets the definition of a Program under 42 C.F.R. Part 2, presently located in 42 C.F.R. § 2.11.

"Part 2 Lawful Holder” means any entity other than a Part 2 Provider that has notified VITL that the records it has provided to VITL consist or are reasonably expected to consist, in whole or in part, of records protected by 42 C.F.R. Part 2.

“Patient”, “Individual” or “Person” means an individual whose personal demographic information or Protected Health Information is stored or transferred by the VHIE. The term includes a personal representative who has the authority to authorize the disclosure of a Person’s Protected Health

Information pursuant to 45 C.F.R. § 164.502 (g) and any other applicable state or Federal laws.

“Payment” means any activity undertaken to obtain or provide reimbursement for the provision of healthcare items or services to a Person.

“Permissible Purposes” means Treatment, Payment, Healthcare Operations, consistent with HIPAA and Vermont law.

“Protected Health Information” and the abbreviation “PHI” shall have the same meaning as the term “protected health information” in 45 C.F.R. § 160.103, limited to the individually identifiable health information created or received by or on behalf of a Participating Healthcare Organization. Such term shall also include Electronic Protected Health Information.

“Public Health Authority” means an agency or authority of the United States or a State that has been granted authority and responsibility to protect public health and to prevent or control disease, injury or disability, and, as such, that is authorized by law to collect or receive such information for the purpose of preventing or controlling disease, injury, or disability.

“Significant Public Health Risk” shall have the same the meaning as the term “significant public health risk as” in 18 V.S.A. § 2 (12).

“Revoke” or “Revocation” of Opt-Out means a Person’s withdrawal of a previous election to Opt-Out.

"Substance Use Disorder Identifying Records” or “SUD Identifying Records” means records obtained from a Part 2 Provider or Part 2 Lawful Holder that meet the applicability provisions for restrictions on disclosure in 42 C.F.R. Part 2, presently located in 42 C.F.R. § 2.12(a)(1).

“Treatment” means the provision, coordination, or management of healthcare and related services by one or more Healthcare Organizations.

Section 3 –Access by Participating Healthcare Organizations

A. **General**. Each individual's electronic Protected Health Information that is contained in the Vermont Health Information Exchange shall be accessible to participating healthcare organizations to the extent permitted under law unless the Individual has affirmatively elected not to have the Individual's electronic Protected Health Information shared in that manner.

Participating Healthcare Organizations shall access Protected Health Information on the VHIE only for permissible purposes and only with respect to individuals with whom they have, had, or are about to commence, a Treatment relationship.

B. **Responsibilities of Participating Healthcare Organizations**. Participating Healthcare Organizations shall–

(i) execute a VHIE Service Agreement addressing the terms of providing Patient PHI for exchange on the VHIE and the Participating Healthcare Organization’s Access to Patient Records
(ii) cooperate in good faith to execute all provider responsibilities under any processes

established by VITL to collect and record Individual elections to Opt-Out, and
   (iii) have policies and procedures in place to ensure that only those individuals involved in Treatment, Payment or HealthCare Operations may access a Persons' PHI on the VHIE.

C. VITL Responsibilities. In addition to the obligations provided elsewhere in this addendum, VITL, as the operator of the VHIE, shall–

   (i) enter into a Business Associate Agreement (BAA), including, if applicable, a Qualified Service Organization Agreement (QSOA), with Participating Healthcare Organizations addressing the terms of VITL's use and disclosure of Individual PHI obtained from the Participating Healthcare Organization and
   (ii) ensure mechanisms exist to ensure records of patients who have Opted Out are not available, except in the event of Medical Emergencies as in Section D.

D. Emergency Access to PHI on the VHIE. Notwithstanding a Persons' choice to Opt-Out, a Participating Healthcare Organization may access the Individual's PHI through the VHIE for use in Treatment of the Individual for a Medical Emergency, but only if the Participating Healthcare Organization is unable to obtain Individual consent for such access. Participating Healthcare Organizations accessing PHI under such circumstances must notify the Individual of such access as soon as is reasonably possible and must obtain a Revocation of the Individual's Opt-Out for further access to PHI of that Individual on the VHIE after the Medical Emergency has ended.

Section 4 – SUD Identifying Records

A. Protections necessary to prevent disclosures. The regulations set forth in 42 C.F.R. Part 2, governing records of covered substance use disorder treatment providers, require additional protections to prevent disclosure of SUD Identifying Records.

B. VITL Responsibilities. In addition to the obligations provided elsewhere in this addendum, including those in Section 3.C, VITL, shall–

   (i) work with AHS, Part 2 Providers, and Part 2 Lawful Holders to identify and meet all applicable technical and programmatic requirements before allowing parties to access SUD Identifying Records under Sections 3, 5, or 6,
   (ii) take reasonable care to prevent unpermitted disclosure of SUD Identifying Records, including working with Part 2 Providers to appropriately identify, store, and manage, as required by law, SUD Identifying Records transmitted to VITL, and
   (iii) disclose SUD Identifying Records as permitted by law and authorized by the Part 2 Provider or Part 2 Lawful Holder or as required by law.

Section 5 – Public Health Access

Patient PHI that is contained in the VHIE shall be accessible to a Public Health Authority for public health purposes to the extent that access is authorized under state and Federal law. This access shall not be limited by the patient's election not to share data with Participating Healthcare Organizations and public and private payers under 18 V.S.A. § 9351(a)(3)(B). A Public Health Authority that receives PHI for a public health activity or purpose may only disclose such PHI to the extent permitted by state and Federal law.

Section 6 – Payer Access

A. **General**. Each Individual's electronic Protected Health Information that is contained in the Vermont Health Information Exchange shall be accessible to public and private payers to the extent permitted under Federal and state law unless the Individual has affirmatively elected not to have the Individual's electronic Protected Health Information shared in that manner.

Public and Private Payers shall access Protected Health Information on the VHIE only for Permissible Purposes and only with respect to Individuals with whom they have or had a relationship.

B. **Payer Responsibilities**. Payers shall–

(i) enter into a Data Use Agreement addressing the terms of their Access to Individual Records and
(ii) have policies and procedures in place to ensure that only those individuals involved in Payment or Healthcare Operations may access a Person's PHI on the VHIE.

C. **VITL Responsibilities**. In addition to the obligations provided elsewhere in this addendum, VITL, as the operator of the VHIE, shall–

(i) if receiving PHI from the Payer entity, enter into a Business Associate Agreement (BAA) with payers addressing the terms of VITL's use and disclosure of Individual PHI obtained from the Payer,
(ii) implement policies and procedures to prevent Payer Access through the VHIE to PHI of Patients who have Opted Out.

Section 7—National Exchange

A. **General.** Each Individual's electronic Protected Health Information that is contained in the Vermont Health Information Exchange shall be available for query-based exchange with national exchanges pursuant to Restatement II of the Data Use and Reciprocal Support Agreement (DURSA), August 13, 2019, and as amended in the future, unless a Participating Healthcare Organization elects to not make their data available or the Individual has affirmatively elected not to have the Individual's electronic Protected Health Information shared in that manner.

Participants in these exchanges shall access Protected Health information for permitted purposes pursuant to and as defined by DURSA to facilitate and protect eHealth Exchange.

Additionally, an individual's PHI contained on the VHIE shall also be provided for permissible purposes to other organizations as required by Federal law.

B. **VITL's Responsibilities.** VITL, in coordination with and subject to the approval of the HIE Steering Committee, shall participate in the DURSA and any successor agreements thereto and shall comply with the requirements of participation. VITL may also participate in the exchange of Protected Health Information with other state or regional health information exchanges under direct agreements so long as they are consistent with the DURSA's exchange framework and protections for the privacy, confidentiality, and security of the health data.

Section 8 – Individual Rights with Respect to Access

A. **Education**. VITL and the Department of Vermont Health Access shall develop, maintain, and administer a program of education that enables Individuals to fully understand their rights regarding the sharing of their Protected Health Information through the VHIE and provide them with ways to find answers to associated questions. Educational materials and processes shall be incorporated as appropriate with existing education obligations, such as Notice of Privacy Practices disclosure requirements under HIPAA, and shall aim to address diverse needs, abilities, and learning styles with respect to information delivery.

   Education materials and processes shall clearly explain–

   (i) the purpose of the VHIE;
   (ii) the way in which Protected Health Information is collected;
   (iii) how and with whom Protected Health Information may be shared using the VHIE;
   (iv) the Permissible Purposes for which Protected Health Information may be shared using the VHIE;
   (v) how to Opt-Out and how to Revoke the Opt-Out; and
   (vi) how to contact the Office of the Healthcare Advocate.

B. **Patient Opt-Out.** With the exception of access by Public Health Authorities and access in a Medical Emergency, Patients shall be free to Opt-Out of participation in the VHIE at any time, which election shall remain in effect with respect to information requested by Participating Healthcare Organizations or Payers, unless and until the Patient Revokes such election in writing.

C. **Patient Access to PHI.** All patients shall be provided the right of access to their PHI contained in the VHIE to the extent permitted under applicable HIPAA rules.

D. **Patient Request for Audit Report.** A Patient may request and receive an audit report of access to their PHI on the VHIE by contacting VITL's Privacy Officer. VITL shall provide the requested audit report as soon as reasonably possible, but in no event longer than 30 days after request.

E. **Revocation.** A Patient who has Opted-Out shall be entitled to Revoke such Opt-Out at any time. VITL shall develop and administer one or more Revocation mechanisms for this purpose, including a mechanism by which the Patient's Opt-Out revocation may be documented by the Payer entity. It is the obligation of VITL to update records of the Patient's Consent status for the VHIE. A Revocation shall remain effective unless the Patient subsequently Opts Out.

F. **Deidentified Data.** De-identified patient information may be used for research, quality review, population health management and public health purposes, as permitted by HIPAA. No commercial use or sale of de- identified patient information is permitted.

G. **VITL Responsibilities.**

   (i) establish one or more user-friendly mechanism through which Patients may Opt-Out,
   (ii) maintain updated Consent-status records of all Patients who have Opted-Out, and
   (iii) ensure the ability to audit access to patient records to facilitate compliance by Participating Healthcare Organizations and participating payers with Accounting of Disclosure regulations under HIPAA.

Appendix B: HIE Steering Committee Charter

Health Information Exchange Steering Committee Charter

Table of Contents

Purpose of the HIE Steering Committee

The HIE Steering Committee exists to:

1. Serve the needs of HIE users by advancing HIE use cases.
2. Strengthen the relationship between authority and accountability; and
3. Engage a broad range of stakeholders in strategic planning and oversight activities.

The Steering Committee's Vision & Mission

Vision: To enable health information exchange that promotes quality healthcare in Vermont.

Mission: To work across organizations and disciplines to create and endorse a shared view of the definition, purpose, and goals of HIE in Vermont.

Ultimately, the Steering Committee exists to support development of a state-wide strategic plan (the HIE Plan) and guide implementation of that plan. In 2018, the Steering Committee identified three overarching goals in the HIE Plan that are intended to guide the state's health information exchange work. The goals include:

1. Create One Health Record for Every Person
    a) Support optimal care delivery and coordination by ensuring access to complete and accurate health records.
    b) Reduce provider burden by aggregating essential data in one, useful location.
    c) Provide people with a comprehensive understanding of their health and care.

2. Improve Healthcare Operations
    a) Enrich healthcare practices with data collection and analysis to support quality improvement and reporting.
    b) Align data aggregation and data quality efforts to support real need.
    c) Reduce burden associated with reporting.
    d) Allow providers to analyze their own data and put information into action.

3. Use Data to Enable Investment and Policy Decisions
    a) Bolster the health system's ability to learn and improve by using accurate, comprehensive data to guide investment of time, labor, and capital, and inform policy making and program development.
    b) Put data in the hands of program's serving population-wide needs.
    c) Enable data-informed decision making.

The Steering Committee's Guiding Principles

- We commit to creating an HIE Plan that is accurate, reliable, and

  actionable.
- We drive to use technology and data to support value-based care.
- We are accountable for meaningful work that furthers the goals of HIE.
- We work to optimize what exists today and be thoughtful about future developments.
- We are good stewards of limited public and private resources.
- We exist to develop systems that better the health and well-being of Vermonters.

Scope

In 2019 and beyond, the HIE Steering Committee will:

- Support development, execution, and oversight of Vermont's HIE Plan.
    - Annually, develop and/or update the HIE Steering Committee charter and bylaws to clearly define roles of members, voting procedures, and other essential operational functions.
    - Annually, update the State's HIE plan to support the health system's needs and priorities. The plan must comply with state law and guidance provided by the Green Mountain Care Board (GMCB) through the annual plan review process.
    - Develop and maintain a technical roadmap to support the State's HIE network and achieve the goals stated in the HIE Plan.
    - Oversee and manage activities set forth in the annual HIE plan.

- Continue to grow and evolve the HIE Steering Committee to best meet the State's needs.
    - Identify growth opportunities for the governance body and assign ad-hoc committees as needed (e.g., data governance, connectivity, finance, audit).
    - Act as the central point of review for new or adjusted priorities with HIE stakeholders. Identify alignment opportunities to further integrate the statewide data management architecture.

- Support the Department of Vermont Health Access (DVHA) and other stakeholders in focusing HIE investments to align with statewide HIE goals.
    - Define the portfolio of investments needed to further HIE goals and, annually, refine the HIE financial sustainability model through evaluation of progress made in the preceding year.
    - <u>Note</u>: The Committee does *not* approve or review public investments. Rather, they aid in the development of strategy that may guide both public and private investments in support of shared, statewide goals.

- Support development of processes and policies that enable achievement of statewide HIE goals.
    - Provide recommendations to the Legislature, GMCB and other stakeholders on actions they can take to support the State's HIE plans and goals and support the development of policy and legislation to further statewide HIE goals and objectives.
    - Identify priority policies that must be focused on to expand interoperability of health information.
    - Review and provide feedback on policies developed by AHS, the VHIE, and other stakeholders related to the exchange of health data.

- Engage stakeholders in the Steering Committee’s work.
    - Actively and consistently engage with existing stakeholder advisory groups to ensure that planning and implementation considers insights from impacted and interested parties.
    - Act as ambassadors of and liaisons to individuals’ respective population or organization represented as Committee members on matters discussed or pursued by the HIE Steering Committee.

Steering Committee Membership

The members of the committee were selected by the Chair to best enable HIE progress in Vermont. Membership is comprised of 14 voting members and 5 non-voting members. AHS’s HIE Unit will act as the Steering Committee’s administrative and operational support.

Name	Role	Population or Organization Represented
Kristin McClure	Chair / Voting Member	**Vermont’s Agency of Human Services**
Jessie Hammond	Voting Member	**Vermont’s Department of Health**
Jimmy Mauro ***Blue Cross Blue Shield of Vermont***	Voting Member	**Payer Representative**
Simone Rueschemeyer ***Vermont Care Partners***	Voting Member	**Mental Health & Substance Use & Intellectual Developmental Disabilities Representative**
Georgia Maheras ***Bi-State Primary Care Association***	Voting Member	**Primary Care Representative**
Rick Dooley ***Health First***	Voting Member	**Independent Provider Practices**
Emma Harrigan ***Vermont Association of Hospitals and Health Systems***	Voting Member	**Hospital Care Representative**
Victor Morrison	Voting Member	**Representative of people who engage with the healthcare system**
Vacant ***OneCare Vermont***	Voting Member	**Accountable Care Organization Representative**
John Saroyan	Voting Member	**Blueprint for Health**

Sandy Rousse ***Central Vermont Home Health and Hospice***	Voting Member	**Home Health and Hospice Representative**
Helen Labun ***Long Term Care Advocate***	Voting Member	**Long Term Care Representative**
Eric Schultheis	Voting Member	**Healthcare Advocate**
Kana Zink	Voting Member	**Health Equity Expert**
James LaRock	Non-Voting Member	**Privacy Expert**
Kathryn O'Neill	Non-Voting Member	**The Green Mountain Care Board**
Emily Wivell	Non-Voting Member	**The Agency of Digital Services**
Beth Anderson	Non-Voting Member	**VITL, Vermont's Health Information Exchange Operator**
Tim Tremblay	Operational Support / Non- Voting Member	**Health Information Exchange Program, Agency of Human Services**

Decision Making

Decisions will be made by a majority vote (unanimity minus 2). The committee will make attempts to bring in affected parties beforehand for their advice. Decisions will be logged by the scribe for that meeting, the Committee Coordinator or HIE Program Manager. The committee will produce a decision document that names, explains, and describes the impact of all decisions. Affected entities will be notified within 30 days.

Communications – Meetings

Note: In April 2020, the Steering Committee agreed to revise the in-person meeting structure considering the COVID-19 pandemic and the need to physically distance from others. The Committee agreed to the following:

- Maintain Regular Meetings
- Meet virtually
- Aim to keep meetings under 2 hours
- Strategically work through small groups (subcommittees) to ensure efficient management of timely activities
- Utilize Email More Often to conduct committee business e.g., consent updates
- Host meetings for special topics: individual or group meetings to get up-to-speed on topics like the 21st Century Cures Act

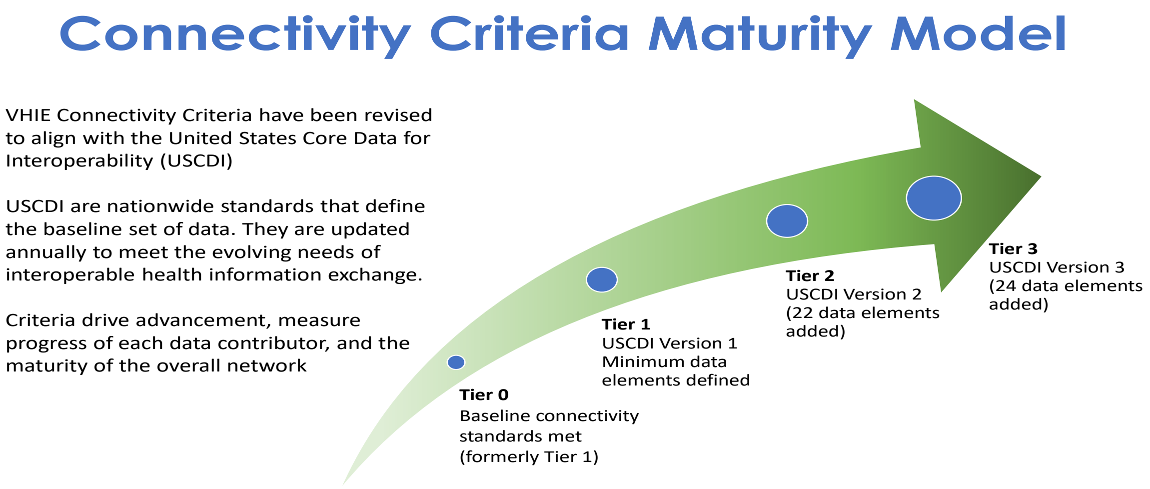
HIE Steering Committee Website

Meeting agenda, minutes, and resource materials will be posted on

https://healthdata.vermont.gov/. Draft materials may be sent via email from the HIE Unit directly to Steering Committee members.

Appendix C: Vermont Health Information Exchange (VHIE) Connectivity Criteria

The VHIE Connectivity Criteria have been revised this year to align with national standards for interoperability of health information technology and for health information exchange. Specifically, the VHIE connectivity tiers have been revised to align with versions of the United States Core Data for Interoperability (USCDI), as shown in the figure below.



VHIE Connectivity Criteria have been revised to align with the United States Core Data for Interoperability (USCDI)

USCDI are nationwide standards that define the baseline set of data. They are updated annually to meet the evolving needs of interoperable health information exchange.

Criteria drive advancement, measure progress of each data contributor, and the maturity of the overall network

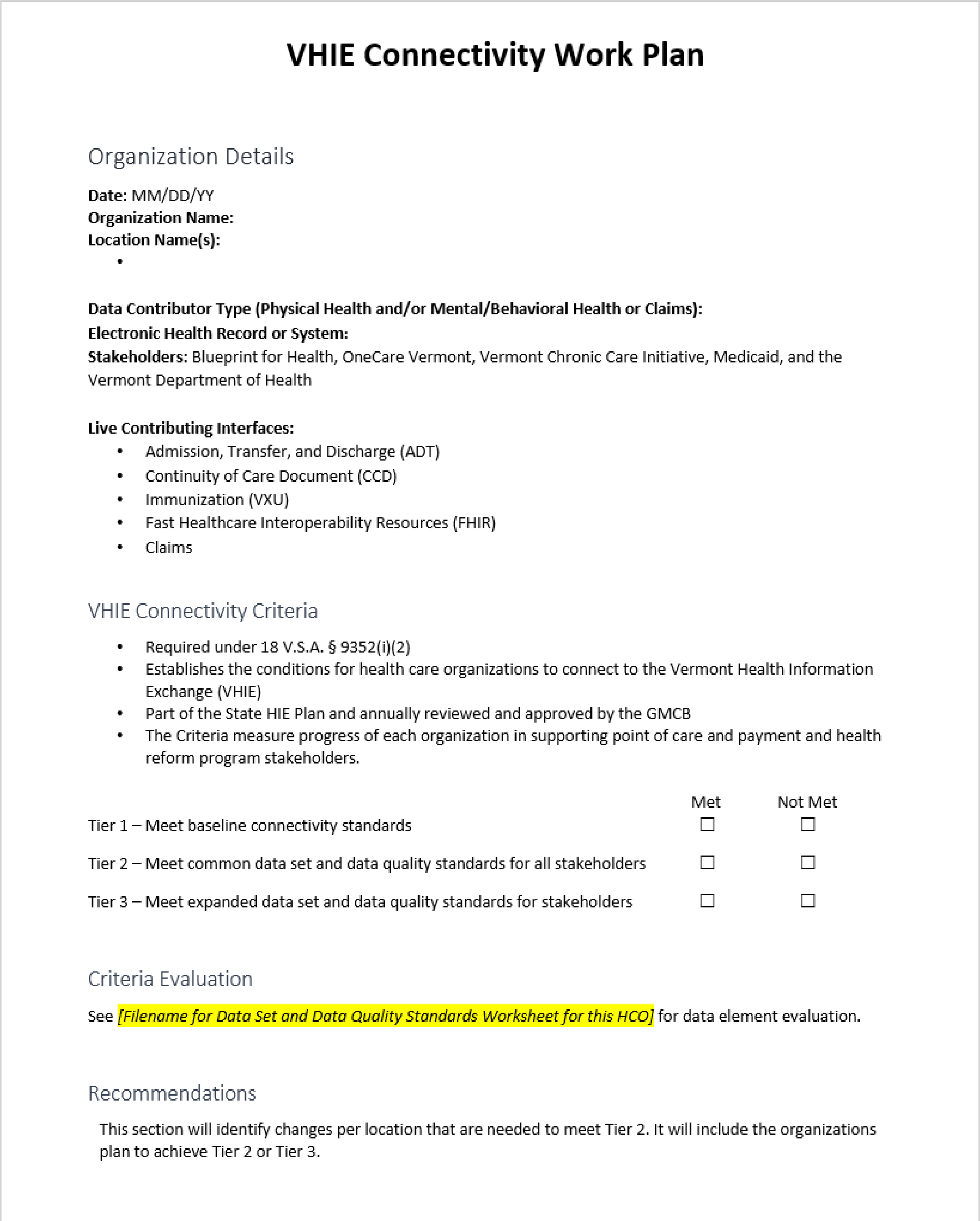
Figure 3: Connectivity Criteria Maturity Model

Detailed lists and specifications of the data classes and data elements for each United States Core Data for Interoperability (USCDI) version (corresponding to each similarly numbered VHIE connectivity tier) have been produced under the direction of the U.S. Office of the National Coordinator (ONC) for Health Information Technology, and are available at the following website:

https://www.healthit.gov/isa/united-states-core-data-interoperability-uscdi

Detailed comparative tables of these USCDI versions by data element are available from VITL and the HIE program.

VHIE Connectivity Criteria Certification Process



VHIE Connectivity Work Plan

Organization Details

Date: MM/DD/YY
Organization Name:
Location Name(s):

-

Data Contributor Type (Physical Health and/or Mental/Behavioral Health or Claims):
Electronic Health Record or System:
Stakeholders: Blueprint for Health, OneCare Vermont, Vermont Chronic Care Initiative, Medicaid, and the Vermont Department of Health

Live Contributing Interfaces:

- Admission, Transfer, and Discharge (ADT)
- Continuity of Care Document (CCD)
- Immunization (VXU)
- Fast Healthcare Interoperability Resources (FHIR)
- Claims

VHIE Connectivity Criteria

- Required under 18 V.S.A. § 9352(i)(2)
- Establishes the conditions for health care organizations to connect to the Vermont Health Information Exchange (VHIE)
- Part of the State HIE Plan and annually reviewed and approved by the GMCB
- The Criteria measure progress of each organization in supporting point of care and payment and health reform program stakeholders.

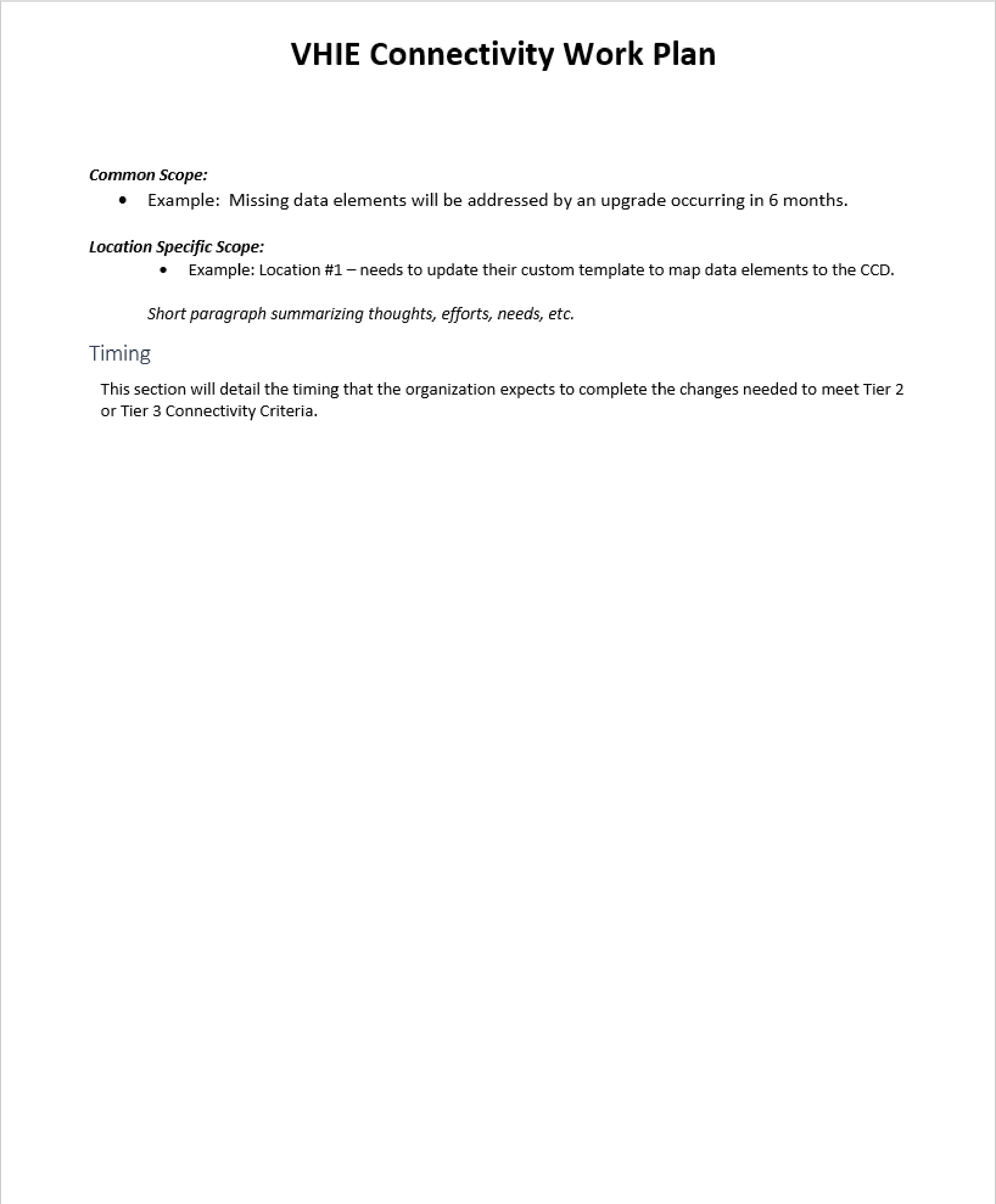
	Met	Not Met
Tier 1 – Meet baseline connectivity standards	☐	☐
Tier 2 – Meet common data set and data quality standards for all stakeholders	☐	☐
Tier 3 – Meet expanded data set and data quality standards for stakeholders	☐	☐

Criteria Evaluation

See *[Filename for Data Set and Data Quality Standards Worksheet for this HCO]* for data element evaluation.

Recommendations

This section will identify changes per location that are needed to meet Tier 2. It will include the organizations plan to achieve Tier 2 or Tier 3.



VHIE Connectivity Work Plan

Common Scope:

- Example: Missing data elements will be addressed by an upgrade occurring in 6 months.

Location Specific Scope:

- Example: Location #1 – needs to update their custom template to map data elements to the CCD.

Short paragraph summarizing thoughts, efforts, needs, etc.

Timing

This section will detail the timing that the organization expects to complete the changes needed to meet Tier 2 or Tier 3 Connectivity Criteria.

Connectivity Criteria Stakeholder Matrix

Tier 0 – Baseline Connectivity Criteria

Tier	Customers	Stakeholders	Customer Responsibilities	Stakeholder Responsibilities	VHIE Responsibilities	Objective and Characteristics	Value in Connecting to the VHIE	Data Criteria	Security	Outcome
0 – Baseline Connectivity	Healthcare organizations (HCO) contributing patient data for use at the point of care. HCOs and payers contributing data as required by health reform delivery and payment programs (Accountable Care Organization, Blueprint for Health, MU, Vermont Dept of Health, Medicaid, other programs)	Green Mountain Care Board (GMCB), Accountable Care Organization, Blueprint for Health, Vermont Dept for Health, Vermont chronic Care Initiative (VCCI), Medicaid, etc.	Engage with VITL to meet the Baseline Connectivity Criteria; establish connectivity to the VHIE; build interfaces from the Healthcare or Payer organizations to the VHIE	Identify priority HCOs and their locations needing to contribute data Identify priority Payer organizations needing to contribute data Communicate to the prioritized HCOs and Payers the program's need and use for data.	Establish and publish technical requirements that support secure, standard connections. Assess baseline data compliance for patient matching and message structure to share data using the Baseline Connectivity Criteria scoring worksheet Work with customer to establish connectivity and build interfaces from the HCO or Payer to the VHIE and from the VHIE to the Stakeholder's system(s).	Interfaces are established that meet HL7 industry standards outlined in the VHIE Baseline Connectivity Criteria document. Interfaces to the VHIE are sufficient to support patient identity matching Interfaces to the VHIE are sufficient for transmitting data to Stakeholder(s) Access to patient data is supported by HIPAA and Vermont law, including patient consent	Clinician access to patient information integrated within the provider's EHR or using the VHIE Provider Portal (VITLAccess) Electronic results delivery from the VHIE (e.g., hospital or third-party laboratory results) seamlessly integrated within a provider's EHR. Data electronically delivered to and accessible within Vermont Immunization Registry Data facilitates timely and accurate Event notification systems	Meet the VHIE Baseline Connectivity Criteria which identifies requirements for patient matching and system specifications for sufficient, secure data exchange. Include the Connectivity Criteria tier achievement in HIT-related Certificate of Need requests to the GMCB	Complete VHIE Services Agreement to meet legal business, operational and security requirements. Attest to HIPAA Compliance. 42 CFR Part 2 Data Compliance is needed when applicable.	Clinicians can access patient data across healthcare settings. Records are matched to the correct patients and duplicate patients are avoided. Data is used to analyze population health and support health reform

Tier 1 – USCDI Version 1

Tier	Customers	Stakeholders	Customer Responsibilities	Stakeholder Responsibilities	VHIE Responsibilities	Objective and Characteristics	Value in Connecting to the VHIE	Data Criteria	Security	Outcome
1 – USCDI Version 1	Participating HCOs in Accountable Care Organization, VCCI, Blueprint for Health, Bi-State, other programs Participating Payers involved in Health Reform efforts	Population Health Management and Quality care programs Accountable Care Organization; Blueprint for Health; Vermont Department of Health; other) Care Coordination programs being supported (VCCI, Accountable Care Organization, others). Policy makers, clinicians and HCO administrators reliant on data reports from the Accountable Care Organization (ACOs); Blueprint for Health; Vermont Department of Health; Medicaid; other. Green Mountain Care Board (GMCB)	Capture data in discrete data fields in EHR. Capture discrete claims data to be shared with the VHIE Hold vendors accountable for sharing data for program(s) in which the HCO or Payer participates Complete the Data Set and Data Quality Standards Worksheet containing the common data set requirements	Establish common clinical and claims data set. Identify HCOs needing assistance in meeting Clinical Quality measures for their program. Partner with VITL and the HCO or Payer and the program(s) in data quality projects to improve data quality during and/or post-interface implementation.	Assess the ability of HCOs and Payers to document minimum data sets and their vendors capability to send that data using the Data Set and Data Quality Standards Worksheet. Facilitate the effort with HCOs and Payers to improve data quality at the documentation level or the technical level to meet stakeholder's and customer's minimum data requirements. Identify data delivery and standardization opportunities Resolve data delivery and standardization opportunities	Minimum clinical and claims data sets are complete, accurate. Clinical and claims data is standardized and therefore interoperable Expanded applications such as Care Coordination, claims and clinical data use can be supported to meet customer specified usage. Performance measurement, population health management, and health reform applications are enabled.	Same as Tier 0 with the addition of: Supports Care Coordination tools (Vermont Chronic Care Initiative, etc.) by those engaged in the care continuum Reduces manual effort by enabling chart abstraction tools for quality measure and population health reporting (Bi-State FQHC, Blueprint for Health, Medicaid, etc.) Robust data analysis and reporting to measure performance (Blueprint for Health practice profiles, Accountable Care Organization, Medicaid, Qlik, etc.)	Participates in and complies with programs that have specific data quality requirements. Meet the common clinical and claims data set requirements in the Data Set and Data Quality Standards Worksheet Include the Connectivity Criteria tier achievement in HIT-related Certificate of Need requests to the GMCB	Same as Tier 0	Increased data quality enables usage and confidence in information for quality performance measurement, population management reporting, and health reform efforts.

Tier 2 and Higher – USCDI Version 2 and Higher

Tier	Customers	Stakeholders	Customer Responsibilities	Stakeholder Responsibilities	VHIE Responsibilities	Objective and Characteristics	Value in Connecting to the VHIE	Data Criteria	Security	Outcome
2 and Higher – USCDI Version 2 and Higher	Participating HCOs in Accountable Care Organization, VCCI, Blueprint for Health, Bi-State, other programs Participating Payers involved in Health Reform efforts	Population Health Management and Quality care programs Accountable Care Organization; Blueprint for Health; Vermont Department of Health; other) Care Coordination programs being supported (VCCI, Accountable Care Organization, others). Policy makers, clinicians and HCO administrators reliant on data reports from the Accountable Care Organization (ACOs); Blueprint for Health; Vermont Department of Health; Medicaid; other. Green Mountain Care Board (GMCB)	Capture data in discrete data fields in EHR. Capture discrete claims data to be shared with the VHIE Hold vendors accountable for sharing data for program(s) in which the HCO participates Complete the Data Set and Data Quality Standards Worksheet containing the expanded data set requirements	Establish expanded clinical and claims data set Identify standardization issues to achieve interoperability Identify HCOs needing assistance in meeting Clinical Quality measures for their program Partner with VITL and the HCO or Payer and the program(s) in data quality projects to continuously improve data quality	Assess the ability of HCOs and Payers to document minimum data sets and their vendors capability to send that data using the Data Set and Data Quality Standards Worksheet. Facilitate the effort with HCOs and Payers to improve data quality at the documentation level or the technical level to meet stakeholder's and customer's minimum data requirements. Identify data delivery and standardization opportunities Resolve data delivery and standardization opportunities	Clinical and claims data sets are complete, accurate, standardized, and interoperable Performance measurement and population health management applications are optimized.	Same as Tiers 0 and 1 with the addition of: Data can be used for more advanced end user tools and services (Care Coordination tools, custom data marts for customer use More advanced reporting driven by clinical and claims data (Comparative data sets, etc.)	Meet the clinical and claims data set requirements in the Data Set and Data Quality Standards Worksheet Scope of data collected supports performance measures, interoperability supports population health management and health reform efforts. Include the Connectivity Criteria tier achievement in HIT-related Certificate of Need requests to the GMCB	Same as Tier 0	Increased data quality enables usage and confidence in information to optimize quality performance measurement, population management reporting, and health reform efforts.

Appendix D: Interface Prioritization Matrix

Highest Priority

- Large People Volume
- Easy Vendor
- Tier 2 Capable
- Site Ready
- No known Upgrade/switch in next 12 months
- Data Priority in alignment with HIE Steering Committee Direction
- FHIR Capable

Interface Prioritization – Lowest Priority

- Small People Volume
- Hard Vendor
- Not Tier 2 capable
- Site not willing
- Upgrading/Switching EHR in next 12 months
- Data Priority not in alignment with HIE Steering Committee Direction
- Not FHIR Capable

Interface Prioritization – Other Considerations/Tiebreakers

- Contributing Data
- Receiving Data
- Replacements in Past
- Programs supported
- Other special circumstances

Interface Prioritization Matrix - Clinical Key

Categories	Description	Criteria
People Volume	Site serves and generates data on a large people population of unique lives from existing data in VHIE	Large (>10,000), Medium (5000-10,000), Small (<5000) or Unknown
Vendor Ease	Is the vendor one we have worked with in the past? Are they easy to work with?	Easy (1-3 months), Medium (3-6 months), Hard (6 + Months or custom formats needed), or Unknown if new vendor
Vendor/Site Tier 2 capable?	How capable is the vendor for Tier 2?	Yes, No, Not Evaluated Yet, or Vendor working on Tier 2 if the vendor has been evaluated but needs to make changes to achieve Tier 2, or Does not Apply if the vendor does not generate all the data types in Tier 2 and could never send it, for example a commercial lab.
Site ready to engage?	Has the site been vetted yet by any group for willingness to proceed?	Yes, No in 2019, or Unknown if they have not been asked in last year
Known Upgrade/Switch in next 12 months?	Is the site planning on upgrading or replacing their EHR in the next 12 months? Note: for replacement interfaces this will be No, as we have already factored this into the filter	Yes or No
Data Category	What type or category of data does this organization generate, or what sector of healthcare are they in? Does it align with the HIE Steering Committee Priorities for the year?	Hospital, Ambulatory, Pharmacy, Home Health, Long Term Care (LTC), Dental, Commercial Lab, COVID, SDoH, MH, BH, Etc. These can change each year. For 2021 COVID is a high priority
Contributing Data?	Is this site currently contributing some data to the VHIE?	No or the types of Data being Contributed already
Receiving Data?	Is this site currently receiving Results Delivery data from the VHIE?	No or the types of Data being Received already
Replacements in Past?	How many times has an interface been replaced by VITL?	# of times replacement interfaces were paid for by DVHA in the past

Programs supported	How many programs will this data serve in Vermont	OneCare Vermont (OCV), Blueprint (BP), Bi-State (FQHCs), Vermont Dept of Health Immunization Registry (VDH), Vermont Chronic Care Initiative (VCCI)
FHIR Capable	Is the vendor capable of connecting to the VHIE using FHIR interfaces?	Yes, No, Not Evaluated Yet
Other special circumstances?	Are there any other special reasons for this to move up in priority?	This can be they are contractually required to connect, or any others that emerge.
Highest Priority	Large Volume	
	Easy Vendor	
	Tier 2 Capable	
	Site Ready	
	No known Upgrade/switch in next 12 months	
	Data Priority in alignment with HIE Steering Committee Direction	
	FHIR Capable	
Lowest Priority	Small Volume	
	Hard Vendor	
	Not Tier 2 capable	
	Site not willing	
	Upgrading/Switching EHR in next 12 months	
	Data Priority not in alignment with HIE Steering Committee Direction	
	Not FHIR Capable	
Other Considerations	Contributing Data?	
	Receiving Data?	
	Replacements in Past?	
	Programs supported	
	Other special circumstances?	

Interface Prioritization Matrix - Claims Key

Categories	**Description**	**Criteria**
People Volume	Site serves and generates data on a large people population of unique lives from existing data in VHIE	Large (>10,000), Medium (5000-10,000), Small (<5000) or Unknown
Vendor Ease	Is the vendor one we have worked with in the past? Are they easy to work with?	Easy (1-3 months), Medium (3-6 months), Hard (6 + Months or custom formats needed), or Unknown if new vendor
Site ready to engage?	Has the site been vetted yet by any group for willingness to proceed?	Yes, No, or Unknown if they have not been asked in last year
Known Upgrade/Switch in next 12 months?	Is the site planning on upgrading or replacing their EHR in the next 12 months? Note: for replacement interfaces this will be No, as we have already factored this into the filter	Yes or No
Contributing Data?	Is this site currently contributing some data to the VHIE?	No or the types of Data being Contributed already
Receiving Data?	Is this site currently receiving Results Delivery data from the VHIE?	No or the types of Data being Received already
Programs supported	How many programs will this data serve in Vermont	OneCare Vermont (OCV), Blueprint (BP), Bi-State (FQHCs), Vermont Dept of Health (VDH), Vermont Chronic Care Initiative (VCCI), DVHA
FHIR Capable	Is the vendor capable of connecting to the VHIE using FHIR interfaces?	Yes, No, Not Evaluated Yet
Other special circumstances?	Are there any other special reasons for this to move up in priority?	This can be they are contractually required to connect, or any others that emerge.
Highest Priority	Large Volume	
	Easy Vendor	
	Site Ready	
	No known Upgrade/switch in next 12 months	
	FHIR Capable	
Lowest Priority	Small Volume	

	Hard Vendor	
	Site not willing	
	Upgrading/Switching EHR in next 12 months	
	Not FHIR Capable	
Other Considerations	Contributing Data?	
	Receiving Data?	
	Programs supported	
	Other special circumstances?	

Interface Prioritization Matrix – Clinical Scoring

Categories (110 Pt Scale)	
People Volume (35 Pts)	
Large	35
Medium	20
Small	10
Vendor Ease (10 Pts)	
Easy	10
Medium	5
Hard	1
Vendor/Site Tier 2 capable? (20 Pts)	
Yes	20
No	0
Not evaluated Yet	10
Vendor working on Tier 2	15
Tier 2 Does Not Apply	20
Site ready to engage? (20 Pts)	
Yes	20
No - in 2019	5
Unknown	10
Data Category in Alignment (5 Pts)	
Yes	5
No	0
Replacements in Past? (5 Pts)	
0	5
1	2
2+	0
FHIR Capable (10 Pts)	

Yes	10
No	0
Not evaluated Yet	5
Other Circumstances (5 Pts)	
Up	5
None	0
Known Upgrade/Switch in next 12 months?	Not needed as locations were already removed from the proposed list this year
Highest Priority	Large Volume
	Easy Vendor
	Tier 2 Capable
	Site Ready
	No known Upgrade/switch in next 12 months
	Data Category Priority in alignment with HIE Steering Committee Direction
	FHIR Capable
Lowest Priority	Small Volume
	Hard Vendor
	Not Tier 2 capable
	Site not willing
	Upgrading/Switching EHR in next 12 months
	Data Category Priority not in alignment with HIE Steering Committee Direction
	Not FHIR Capable
Other Considerations	Replacements in Past?
	Other special circumstances?
Tiebreakers	Contributing Data?
	Receiving Data?
	Programs supported
NOTE: There are things out of VITLs control that could affect this system and may cause a need to re-rank. Ex: If aCOVID Vaccine becomes available in late Fall 2020.	

Interface Prioritization Matrix – Claims Scoring

Categories (90 Pt Scale)	
People Volume (35 Pts)	
Large	35
Medium	20
Small	10
Vendor Ease (10 Pts)	
Easy	10
Medium	5
Hard	1
Unknown	5
Site ready to engage? (20 Pts)	
Yes	20
No	0
Unknown	10
FHIR Capable (20 Pts)	
Yes	20
No	0
Not evaluated Yet	10
Other Circumstances (5 Pts)	
Up	5
None	0
Highest Priority	Large Volume
	Easy Vendor
	Site Ready
	No known Upgrade/switch in next 12 months
	FHIR Capable
Lowest Priority	Small Volume
	Hard Vendor
	Site not willing
	Upgrading/Switching EHR in next 12 months
	Not FHIR Capable
Other Considerations	Other special circumstances?
Tiebreakers	Contributing Data?

	Receiving Data?
	Programs supported
NOTE: There are things out of VITLs control that could affect this system and may cause a need to re-rank.	

Appendix E: Outcomes Based Certification Metrics

Direct Care/Care Coordination Outcomes

Direct Care/Care Coordination

Metric
1.1a Number of VITLAccess Users
1.1b Number of HCO VITLAccess Users/Number of Potential HCO Users
1.1c Number of Patient Queries through VITLAccess
1.2 Number of Medicaid patient records transmitted from the VHIE to the Medicaid care coordination tool

Direct Care/Care Coordination: Event Notification

Metric
3.1 Number of event notifications (ADT) messages sent to Patient Ping through VHIE connection
3.2 Master Patient Index: Percent Medicaid Match Rate

Direct Care/Care Coordination: Electronic Results Delivery

Metric
4.1 Number of LAB messages captured in the VHIE
4.2 Number of RAD messages captured in the VHIE
4.3 Number of TRANS messages captured in the VHIE

Public Health Outcomes

Metric
5.1 The percent of total immunization messages (VXU) provided by the VHIE to the Immunization Registry by HL-7
5.2 Percent of total death records transmitted from Death Registry to VHIE
6.1 LAB messages captured in the VHIE and transmitted to the Public Health Authority

Value Based Care Outcomes

Metric
7.1 Blueprint for Health Clinical Extract Report from the VHIE

Appendix F: Policy Background

- Brief Review of Vermont Policy Impacts on HIE -

In 2006, to support the data needs related to the Global Commitment Waiver, the Vermont General Assembly Passed legislation[31] establishing policies and standards to govern the state's health information technology infrastructure.

In 2007, the General Assembly authorized VITL to "operate the exclusive statewide health information exchange network" and develop the State's Health Information Technology Plan (what is now called the HIE Plan).

In 2008, Vermont's General Assembly established the Health-IT (HIT) Fund to provide dedicated funding for "health information technology adoption and utilization." Revenue from the healthcare claims tax is paid by the health insurers on private health insurance claims, and the revenue collected from 0.199 of 1% of all health insurance claims is deposited into the General Fund, pursuant to 32 V.S.A. § 10402(b). The portion of the claims tax allocated for health information exchange activities amounts to approximately $3.5M-$4M annually. Each year since its establishment, the legislature has extended the HIT Fund for one or two additional years; the HIT Fund is now extended to July 1, 2023.

In 2011, the Green Mountain Care Board (GMCB) became statutorily obligated to review and approve Vermont's statewide Health Information Technology Plan.

In 2015, Vermont Act 54 charged the GMCB with oversight of VITL's budget.

In 2017, Vermont Act 73 required the State to conduct a comprehensive review of Vermont's HIT Fund, the Health IT Plan, the VHIE, and VITL. One of the outcomes of the evaluation was the creation of the HIE Steering Committee to address issues with fragmented governance.

In 2018, the General Assembly passed Act 187 requiring the State and VITL to operationalize the recommendations from the Act 73 Evaluation Report. Third party reports confirm that VITL and DVHA satisfactorily addressed all recommendations from the evaluation. The Act also authorized the HIE Steering Committee to develop the statewide Health Information Technology Plan and required DVHA to produce a report on the State's consent policy.

In 2019, Act 53 called for the adoption of an "opt-out" consent policy for the sharing of health information through the VHIE. DVHA and VITL were required to execute robust public education and provide substantial opportunities for public input in the process. The consent policy officially changed on March 1, 2020.

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[31] Act 191, *An act relating to healthcare affordability for Vermonters*. (2006).

In 2021, Vermont's law on immunization records, 18 V.S.A. § 1129, was amended to allow immunization record sharing from the Department of Health's Immunization Registry to the Vermont Health Information Exchange.

In 2022, Act 167 called for the HIE Steering Committee to "continue its work to create one health record for each person that integrates data types to include healthcare claims data; clinical, mental health, and substance use disorder services data; and social determinants of health data." It mandated that, "In furtherance of these goals, the HIE Steering Committee shall include a data integration strategy in its 2023 HIE Strategic Plan to merge and consolidate claims data in the Vermont Healthcare Uniform Reporting and Evaluation System (VHCURES) with the clinical data in the HIE." In order to facilitate and improve data integration efforts, Act 167 also repealed subsection (e) of 18 V.S.A. § 9410, which now allows for the collection of direct identifiers (such as patient name) into the secure VHCURES database. This change allows data submission by all payers (no longer just Medicare, but now also commercial and Medicaid payers) into VHCURES with direct identifiers (not hashing the identifiable data before submitting data).

In 2023, after an extensive rule-making process, the GMCB revised its VHCURES Reporting Manual effective February 1, 2023, to require participating healthcare data submitters to submit direct personal identifiers as part of their claims data submissions (instead of hashing, or encrypting, those identifiers as had been required previously). This change enabled the potential for substantially improved patient-record matching and allowed the VHCURES system to more reliably assign a single or common personal identifier to a patient's records across sources (such as from different payers) and across time. Previously, any slight variations in the form or spelling of patient identifiers across sources or across time could lead to different hashed or masked ID values for an individual, and lead to much of a patient's medical history being fragmented or lost in the dataset. This change also set the conditions to enable improved linkage of claims and clinical data, to provide a more complete and comprehensive medical record for individuals. Such claims/clinical linkage is necessary, for example, to calculate certain hybrid healthcare quality measures, such as the percent of patients with hypertension whose blood pressure is in control, or the percent of patients with diabetes whose blood sugar indicators (HbA1c) are in poor control.

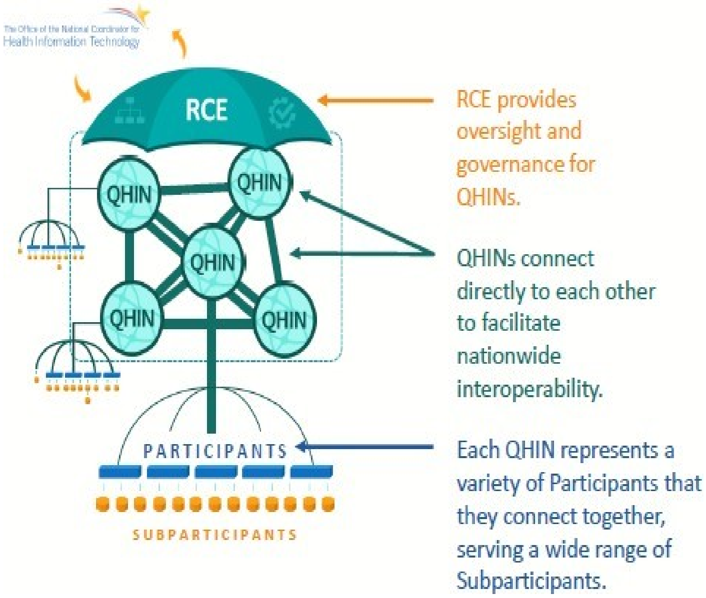
- Brief Review of Federal Policy Impacts on HIE -

Policies set forth by the Federal government catalyzed digitization of health records systems – particularly the Health Information Technology for Economic and Clinical Health (HITECH) Act and the creation of the Office of the National Coordinator for Health IT (ONC) – and have acted as a driver of health system interoperability efforts. Recent Federal rules aim to take this one step further by putting people at the center of healthcare by giving individuals access to their personal electronic health information.

On March 9, 2020, the HHS Office of ONC and Centers for Medicare & Medicaid Services (CMS) released two rules, which implement the interoperability and people access provisions of the Federal 21st Century Cures Act. Together, these rules mark the transition to more robust Federal healthcare data sharing policies from the Federal government, requiring both public and private entities to share health information with individuals while keeping information private and secure, thus allowing people unprecedented access to their health data and resources to research healthcare providers, ultimately empowering them to make informed decisions about their care.

The ONC rule (the ONC 21st Century Cures Act Final Rule), establishes a technical framework that sets standards for information sharing and penalties for information blocking. The CMS rule (the CMS Interoperability and Patient Access Final Rule) sets specific requirements of organizations funded by CMS to share health data with patients and among payers.

TEFCA: A Basis for Nationwide Interoperability



In support of its goal to expand access to health data to improve outcomes, in 2016 the US Department of Health and Human Services (HHS), Office of the National Coordinator for Health Information Technology (ONC) introduced the creation of the Trusted Exchange Framework and Common Agreement (TEFCA) as part of the 21st Century Cures Act. In early 2022, ONC and the Sequoia Project, the Regional Coordinating Entity selected for implementation, published the Trusted Exchange Framework, Common Agreement version 1 and several Standard Operating Procedures (SOPs), that set the foundation for implementation. A Roadmap for future FHIR support was also released.

Fundamentally, TEFCA creates a nationwide system that enables secure sharing of health data through a network of networks, in compliance with the myriad of Federal and state health data privacy and access laws. Interested participants, such as hospitals, primary care providers, health networks, and HIEs can connect through to-be-selected Qualified Health Information Networks (QHINs), that agree to abide by TEFCA technical standards (Trusted Exchange Framework) and operating terms (Common Agreement). The Recognized Coordinating Entity (REC) plays an overarching role in governing data exchange across the network.

Eventually, TEFCA will also provide a path for data exchange beyond traditional clinical providers, a tactic for improved health data use that Vermont is already pursuing. There are no mandates for participating in TEFCA and sharing data across regional partners, and there will be fees for local HIEs to connect to QHINs.

Appendix G: Data Governance Background

The governance approach for the Health Data Space should build upon the existing HIE framework and align with VHIE's existing governance structure to support the following key objectives:

- Improve data sharing across the Health Data Space
- Improve data quality.
- Provide the right data, at the right time, to the right stakeholder.
- Improve data analytic capacity and reporting.

It will be imperative that data be updated at a cadence that reflects the availability of new information. For individuals who will need a single longitudinal record such as providers or caregivers, it will be essential that they have actionable, current, information that reflects recent test results, medical procedures, and diagnoses. Another consideration will be the process by which data is accessed, which may vary across domains and systems. The method for organizing and accessing data (e.g., dashboard, portal) by different user groups must align with the data architecture and available resources. An important component of the HIE data governance is to ensure it is operational.

The State and HIE Steering Committee recognize the criticality of data governance. As the Unified Health Data Space is evolving, it is important that the data governance evolves with it. To realize the vision of an integrated health data infrastructure (Unified Health Data Space), Vermont needs data exchange policies and processes that recognize individualized needs while supporting holistic care, system measurement, and improvement. This section outlines the data governance model that will be established in 2023 and enhanced as necessary for a living and operational framework. The model ensures the appropriate structure for planning and governing the health data space, coordinating services, and appropriate use of the data to advance clinical and public health objectives.

The objectives of data governance include the following themes, originating from various stakeholders of the VHIE:

- Ensure **secure access** to all data provided through the Unified Health Data Space. The stakeholders know the challenges and restrictions of the diversity of data on the roadmap for this environment. It will take coordination and clear communication to maintain the security of Vermonters' health data and to allow the State to continue to operate as good stewards of that information.
- Ensure the quality of data provided in the environment. Combining data in this environment will have little value without confidence in its quality. The more data in the environment, the more challenging maintaining quality becomes. Governance is essential to guide the processes to **ensure quality data**.
- Accurately **unify data** into a single linkable record while maintaining integrity. Having a single record increases the value of data to the State and ultimately its people by introducing the ability to analyze problems beyond a single domain. Leverage unified data for the benefit of public health and individual care.
- **Enhance the usability** of data for social services and healthcare institutions across the State.

> In the end, data should be highly usable with as few barriers to access and understanding as possible. Data, when available, should have a very specific purpose or utility.

A data governance framework connects the organization's data strategy and goals to the structure necessary to manage the data that will achieve those goals. It contains the rules, processes, and procedures to implement and maintain the program over time. These themes should live explicitly throughout the governance program as decisions are made, priorities are set, and projects are planned and implemented.

The data governance components for Vermont's Unified Health Data Space are directly tied to the feedback and priorities identified by involved stakeholders. The themes listed above have been condensed to the following components: quality data, secure data, connected data, and purposeful data. Therefore, each decision made, and priority determined, should be in pursuit of these key components.

There are also key elements of data governance that enable the organization to realize the benefits of each component but are not components in and of themselves. For Vermont, these elements include communication, culture, and collaboration. For example, collaboration alone is not a sufficient goal in data governance but prioritizing the element of collaboration will enable the Unified Health Data Space to provide quality, secure, connected, and purposeful data. The HIE is committed to providing timely and effective communication. As such, the HIE Steering committee will contemplate open meetings for the Steering Committee, Data Governance Council, and Sub-Committees. The result of this discussion will be included in the 2023 HIE Plan. As mentioned in the 2020-2025 Federal Health Information Technology Strategic Plan, 'in our everyday routines, we rely on technology to do a lot for us.'32 As such, the HIE will continue to leverage our website to provide transparency and effective communication. HIE Steering Committee materials are published in advance of the meetings, the meeting minutes are published, and any follow-up material is published. As part of normal course of business, the HIE continues to update and modernize the website to make it as useful and easy to navigate as possible. This website can be accessed at: healthdata.vermont.gov .

The figure below illustrates the four data governance components and how they are supported continually by the elements.

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[32] 2020-2025 Federal Health IT Strategic Plan, https://www.healthit.gov/topic/2020-2025-federal-health-it-strategic-plan

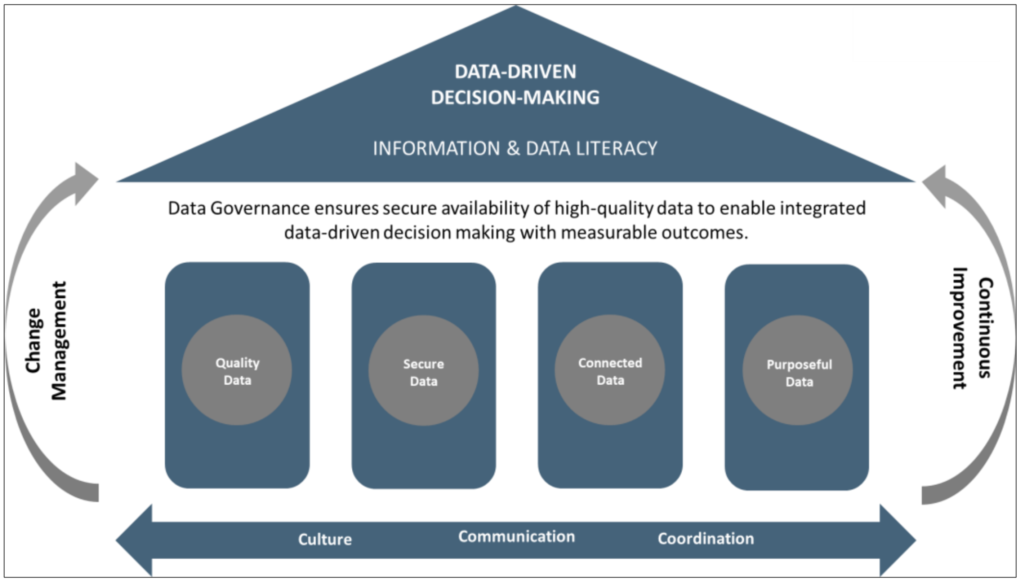

Figure 4: Data governance components

Governing by Domain

Categorizing information is one of the first steps in defining boundaries around information ownership and responsibilities for maintenance. Data domains are an industry standard used to segment data. A data domain is typically a logical business grouping of information, one that may likely go beyond the scope of a singular system. Domains are typically derived through the operations or functions an organization performs and subsequently the data used to support those functions.

In domain-centric governance structures, data is expected to be governed independently by the domain business owners - the group of people who manage the collection and operations of the business functions of 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 can then be consumed by other domains within the organization.

As more data domains are integrated into the Unified Health Data Space, it is helpful to refer to any existing standards around domain identification and categorization. Considering and/or conforming to said standards can allow for easier integration across the industry of healthcare systems, making the unified data even more valuable.

For the HIE, the recommended data governance structure is depicted below. As the utility of the Unified Health Data Space grows and evolves over time, the data governance structure will need to adapt accordingly. This structure has the following characteristics:

- Domain-centric ownership
- Operates on the assumption that data is managed by domain owners
- Central function to define standards for integrating and accessing data

- Outcomes-driven operation

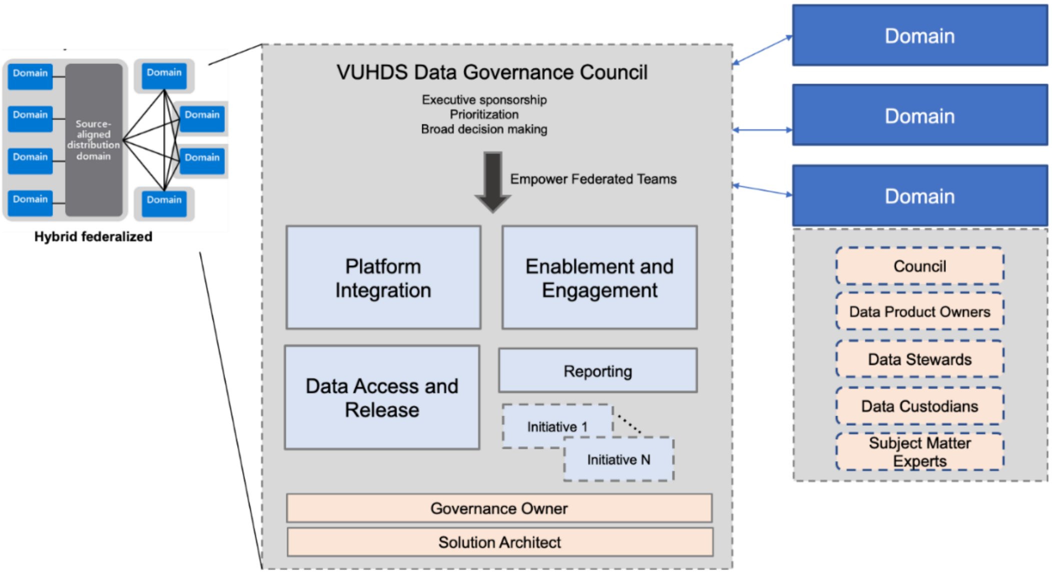

Figure 5: Data governance structure

Data Governance Council

A Data Governance Council provides executive sponsorship, prioritizes the goals, and is responsible for broad decision-making for the Unified Health Data Space. In short, it is the authority that manages the environment. A Unified Health Data Space Council is necessary to include responsible parties who own the data that will eventually live in the environment, which will extend beyond what is currently in the HIE. The Council also acts as an internal authority over how the data is integrated and managed for the environment.

The responsibilities of the Council include:

- Empowering and forming Federated Teams to support the execution and operations of data governance for the Unified Health Data Space.
- Monitoring program effectiveness by tracking the status of governance activities and initiatives. This can be managed by the Governance Owner, whose role is defined below, or by leveraging the Federated Teams.
- Setting priorities for the program by developing and/or evaluating use cases or outcomes for the benefit of Vermonters.
- Setting and approving policies. The Council should provide executive support for policy changes. The Federated Teams and subject matter experts should provide evidence-based support.
- Provide executive sponsorship, including but not limited to funding support, communications, and being an escalation point for Federated Teams.
- Communicate and educate data use and data governance across their respective stakeholder groups

HIE Steering Committee Model and Structure

The steering committee model is designed to identify where decision makers go for support, who is responsible for oversight, who provides HIE services, and how service providers are held accountable. It also calls for the Steering Committee to:

1. Define an HIE investment portfolio and monitor statewide investments in service of Vermont's HIE goals.
2. Assess the viability of investments, identify the needed level of investments, and consider the appropriate balance of public and private sourced funds.
3. Advance HIE use cases, ensure accountability of all parties involved in furthering the State's HIEgoals, and engage a broad range of stakeholders in the strategic planning and oversight activities.
4. Receive the HIE Data Governance Council recommendations.

The Steering Committee's goals, commitments, and membership are included in its Charter in Appendix B. While the Steering Committee continues to hold the strategic vision for HIE, sub-committees provide subject matter expertise, operational support, and bring specific recommendations to the larger body. Subcommittees have proven to be an effective element of HIE governance. For 2023 there are four existing subcommittees currently identified. As needed, subcommittees will be created for their specific purpose and continue or complete as needed to help inform governance and project success. For some areas, these directly map to domains of data.