Vermont's Health Information Exchange Strategic Plan

2018-2019

APPROVED BY THE GREEN MOUNTAIN CARE BOARD, NOVEMBER 2018

Prepared by Vermont's 2017-2018 Health Information Exchange Steering Committee
Submitted by the Department of Vermont Health Access

Contents

Key Terms

Health information – Administrative and clinical information created during care delivery which supports coordination of care, reimbursement, public health and quality reporting, analytics, and the policy and governance surrounding management of the health care system.

Health information exchange (HIE) *verb* – The action of sharing health information across facilities, organizations, and government agencies 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 health care system. There is at least one HIE in 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 the Vermont Information Technology Leaders (VITL).

People – Throughout this plan there are references to "people" - not patients, clients, members or beneficiaries. Fundamentally, all actors in the health system are people, not the diseases they have or the insurance cards they hold. Using this term maintains the reminder that the health system is here to support health and well-being, not stigmatize or reduce any person to their symptoms, situation or relationships.[1]

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.[2]

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 health care facilities, health care 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.

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[1] Williams, S. T. (2013, November 22). *A person, not a patient: Words about the words we use*. MinnPost. Retrieved from https://www.minnpost.com

[2] World Bank. 2007. Healthy Development: The World Bank Strategy for Health, Nutrition, and Population Results. Washington, DC. World Bank. https://openknowledge.worldbank.org/handle/10986/6843 License: CC BY 3.0 IGO.

Executive Summary

There is consensus that the ability to exchange health information across the components of the American health care system is needed and would be valuable. However, it is one thing to recognize a need, and another to fulfill it. Fourteen years after President Bush announced a 10-year goal of expanding electronic health records (EHR), the promise of health information exchange (HIE) remains unfulfilled in many states, including Vermont (see p.5). Time, effort, and significant investment have focused on developing technology, but have not rendered the expected value.

The goal of Vermont's Health Information Exchange Strategic Plan is to envision a future where HIE is valuable and provide policymakers and regulators with a way to hold the HIE program accountable for creating that value. Written by the Department of Vermont Health Access (DVHA) in partnership with the HIE Steering Committee, the plan represents a tangible, transparent, and accountable commitment to keeping Vermont's HIE efforts on track.

The Framework

The plan is built upon a vision for HIE that puts people, not technology, at the center of the work. It establishes a framework to achieve that vision and draws upon two bodies of work from 2017: the [Evaluation of Health Information Technology Activities](#) (2017 Evaluation) with recommended action steps to remediate issues ranging from governance to technology and "use cases" collected by the HIE Steering Committee and their networks to articulate how people from across the continuum of care interact with, and rely upon, HIE tools and services (p.9). The "use case" collection highlights needs ranging from public health reports that require the collection of disease data, to quality reports that measure improvements in process and outcomes, to the need for real-time exchange of health records to coordinate care.

The HIE needs identified in the use cases can be summarized in three 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. ***Improve Health Care Operations -*** Enrich health care operations through data collection and analysis to support quality improvement and reporting.
3. ***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.

Furthermore, the Steering Committee identified other areas of the HIE ecosystem that must be developed to drive success in achieving the three high level goals: a transparent governance model (p.11), strong policies and processes (p.12), sustainable financing (p.13), and implementation of various technology needs (p.14). HIE technologies include the end-user services that will deliver on the goals, the exchange services that operate behind the scenes to meet basic needs, and the foundational services that must be in place to enable the end-user services and exchange services. For each of these components, the plan provides an overview, vision, and discussion of key challenges (p.15-21) to ensure that there is a platform for strategic discussion and planning going forward.

Governance and Sustainability

The plan proposes a permanent governance structure that will address sustainability, a need identified in the 2017 Evaluation's core critique. The Evaluation report concludes, "no group or organization is solely responsible for execution of HIE activities in the state, and there is no statewide strategic plan guiding time constrained HIE investments."

The proposed governance model calls for a single steering committee to be responsible for formally convening key HIE stakeholders to develop and oversee execution of an annual statewide HIE strategic plan. The model will advance HIE use cases, ensure accountability of all parties involved in furthering the State's HIE goals, and engage a broad range of stakeholders in strategic planning and oversight activities. The model identifies where decision makers go for support, who is responsible for oversight, who provides HIE services, and how service provides are held accountable (p.23-27).

The plan calls for the steering committee to define an HIE investment portfolio and monitor statewide investments in service of the Vermont's HIE goals. It calls for the committee to assess the viability of investments, to identify the needed level of investments, and to consider the appropriate balance of public and private funds (p.34-35).

Immediate Steps

The plan's detailed list of objectives and tactics provide transparency and a focus on HIE tools that will build an efficient and outcome-oriented health delivery system for Vermont.

The list of objectives is structured in service of the three central goals. The objectives detail "*what*" the State needs to achieve the goals, allowing planning for "*how*" progress will be made toward each (p.28).

The 2018-2019 Tactical Plan focuses on enhancing foundational and exchange services in support of future and existing end-user services (p.29-33). It focuses on steps to establish the HIE's permanent governance model; make progress on consent management, data quality, and identity matching; initiate long term, sustainable financial planning; and develop a 2020 plan including a technical roadmap. It features a checklist of key activities and cites the party that is accountable for each activity to ensure that accountability is clear and help policymakers and regulators hold the program accountable.

A Nimble Approach to Technical Innovation

While it is crucial for Vermont's HIE Plan to be anchored in tactics and benchmarks that are specific and time-bound, it is just as crucial for the plan to be nimble, scalable, and dynamic. Specifically, the HIE Plan and the Steering Committee must be responsive to the evolving technology landscape and constantly assess potential changes. The HIE program must be open to new opportunities to achieve its goals and use the Steering Committee to help assess opportunities and adjust the course as needed.

This plan is only useful if it is used and well-curated over time. DVHA, in consultation with its HIE Steering Committee, takes responsibility for this ongoing assessment of the landscape. DVHA commits to coordinating the HIE Plan and to proposing revisions annually to the Green Mountain Care Board (GMCB), as well as conducting a comprehensive update every five years. With clear ownership and accountability, DVHA, the GMCB, and Vermont's HIE network will be positioned to deliver on the promise of HIE. With this coordination, HIE efforts can support more efficient, less costly, quality health care in Vermont.

A History of HIE in Vermont

Below is a brief overview of Vermont's HIE history intended to provide context for the 2018-2019 HIE Plan that follows.

2003: Vermont's Department of Health establishes its first public health registry for secure collection, storage, retrieval and analysis of health information for defined populations. Now, the Department has four disease and/or event registries including the Birth Information Network, the Cancer Registry, the Immunization Registry and the Prescription Drug Monitoring System. Data collection on Vermont's population dates back to 1857.

2004: President George W. Bush announces a 10-year goal of assuring that most Americans have electronic health records (EHRs) and in his State of the Union Address proclaims, "By computerizing health records, we can avoid dangerous medical mistakes, reduce costs, and improve care." The President signs an Executive Order establishing the Office of the National Coordinator for Health Information Technology (ONC).[3] The ONC becomes the principal federal entity charged with coordination of nationwide efforts to implement and use the most advanced health-IT and exchange.

2005: The Centers for Medicare and Medicaid Services (CMS) signs the Global Commitment Waiver with Vermont allowing the State to utilize innovative models providing essential health services to Vermont's Medicaid population. Programs deployed under the Global Commitment waiver increase reliance on the collection of health care data.

2006: To support the data needs related to the Global Commitment Waiver, the Vermont General Assembly passes legislation[4] establishing policies and standards to govern the state's health information technology infrastructure.

2007: The Vermont General Assembly authorizes Vermont Information Technology Leaders, Inc. (VITL) to "operate the exclusive statewide health information exchange network" and develop the state's health information technology (IT) plan. VITL and the Secretary of Administration are directed to solicit voluntary contributions to a health-IT fund with a goal of $1M to provide loans and grants to specific care providers serving low income people.[5]

Under contract with the State, VITL convenes a Vermont Health IT Plan workgroup consisting of 30 heath care stakeholders. VITL's Board of Directors submits the *Vermont Health Information Technology Plan, Strategies for Developing a Health Information Exchange Network* plan to representatives from the State government and legislature.[6]

2008: The Vermont General Assembly establishes the Health-IT (HIT) Fund to provide dedicated funding for "health information technology adoption and utilization" in support of the initiatives outlined in the state's strategic health-IT plan. A .0199% tax on health insurance claims is the HIT Fund's primary revenue source.[7]

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[3] The White House. (2004). *Promoting Innovation and Competitiveness: President Bush's Technology Agenda*. Retrieved from https://georgewbush-whitehouse.archives.
[4] Act 191, *An act relating to health care affordability for Vermonters*. (2006).
[5] Act 70, *An act relating to corrections and clarifications to the Health Care Affordability Act of 2006 and Related Legislation*, Sec. 24. (2007).
[6] Vermont Information Technology Leaders. (2007). *Vermont Health Information Technology Plan: Strategies for Developing a Health Information Exchange Network.* Retrieved from http://hcr.vermont.gov.
[7] Act 192, *An act relating to making appropriations for the support of government*, Sec. 7.004. (2008).

Vermont's Blueprint for Health Program procures a clinical registry system to collect data from Blueprint practices. The system has since been expanded and may develop further in support of the Women's Health Initiative, the Hub and Spoke program, and other statewide projects.

2009: The U.S. Congress passes the Health Information Technology for Economic and Clinical Health Act (HITECH) as part of the American Recovery and Reinvestment Act (ARRA) to speed adoption of EHR and exchange systems. Under HITECH, CMS constructs the EHR Incentive Program to provide financial incentives for "Meaningful Use" of EHR technology. The Medicare EHR Incentive Program concluded in 2014, and CMS transitioned reporting requirements and payment adjustments for Medicare providers to the MACRA/MIPs Quality Payment Program (QPP). Incentives for Medicaid providers meeting Meaningful Use continue through 2021.[8]

The General Assembly transfers authority of Vermont's statewide Health Information Technology Plan to the Secretary of Administration or designee.[9]

2010: The ONC designates VITL as the Regional Extension Center (REC), the entity designated to provide technical assistance to local providers as they work to adopt and optimize new EHR technology. Support for this designation persists through 2014.

The Division of Health Care Reform as part of the Department of Vermont Health Access within Vermont's Agency of Human Services updates Vermont's strategic Health-IT Plan in collaboration with VITL, state policy makers, administrative officials and other stakeholders.[10]

2011: The Department of Vermont Health Access begins administering the Medicaid EHR Incentive Program. As of 2018, the program has distributed $54.4M in 100% federal dollars to eligible professionals and hospitals. Every hospital in Vermont has an EHR system and has taken advantage of the program. Close to 80% of primary care providers in Vermont use an EHR.[11]

The Green Mountain Care Board is established through Vermont Act 48. The Board is charged with "reducing the rate of health care cost growth in Vermont while ensuring that the State of Vermont maintains a high quality, accessible health care system." It is their statutory obligation to "review and approve Vermont's statewide health information technology plan."[12]

2012: Vermont receives a $45 million State Innovation Model (SIM) Model Testing grant from the Centers of Medicare & Medicaid Innovation (CMMI). Vermont's SIM project, known as the Vermont Health Care Innovation Project (VHCIP), establishes the 27-member Health Data Infrastructure Workgroup charged with guiding and monitoring investments in the expansion and integration of health information technology.[13]

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[8] Centers for Medicare & Medicaid Services. (2018). *Medicare and Medicaid Promoting Interoperability Program Basics.* Retrieved from https://www.cms.gov.

[9] Act 61, *An act relating to health care reform*, Sec. 1. (2009).

[10] Vermont State Agency of Human Services et. al. (2010). *Vermont Health Information Technology Plan (VHITP).* Retrieved from
https://healthdata.vermont.gov/sites/healthdata/files/HitHie/PDF/2010%20VT%20HIT%20Plan.pdf.

[11] The Office of the National Coordinator for Health Information Technology. (2018). *Health IT Data Summaries.* Retrieved from https://dashboard.healthit.gov/apps.

[12] Act 48. *An act relating to a universal and unified health system*, Sec. 3. (2011).

[13] State of Vermont Health Care Innovation Project. (2017). *State Innovation Model Performance Period 3 Annual Report.* Retrieved from http://healthcareinnovation.vermont.gov.

The Green Mountain Care Board (GMCB) introduces a policy on protected health information on Vermont's Health Information Exchange or through the Blueprint.[14]

2013: Vermont requests additional HITECH funds to advance health information exchange in the State beyond a focus exclusively on EHR adoption and use. Vermont has drawn down federal funds to connect providers to Vermont's Health Information Exchange (VHIE) operated by VITL and improve the system (e.g., creation of a provider portal), develop care coordination systems, and expand the state's registries operated by the Department of Health and the Blueprint for Health program.

The GMCB assumes responsibility for VHCURES, Vermont's all-payer claims database.[15] Uniting clinical and claims data is seen as the only way to fully understand care interactions, and therefore a requirement for population health management.

2014: VITL introduces a provider portal, VITLAccess, allowing providers to login to see health record data that has been collected through the VHIE.

2015: The Vermont General Assembly passes Act 54 charging the GMCB with regulatory oversight of VITL's budget and core activities. Act 54 clarifies that the Secretary of Administration (or DVHA as its designee) shall exercise existing and ongoing authority to "enter into procurement grant agreements with VITL" after the Board "approves VITL's core activities and budget."

2016: The Vermont State Auditor conducts a review of VITL operations. The audit findings recommend specific actions to improve the efficacy of DVHA's oversight of VITL by increasing the transparency and accountability of HIE activities. Through 2017, DVHA reports to the State Auditor on activities completed to comply with audit findings.

The State contracts with a third-party to develop a strategic Health Information Technology Plan. Agency of Administration staff present the plan to the GMCB; however, the Board takes no action.

2017: DVHA shifts its procurement strategy with VITL from grants to deliverable based contracts to hold VITL accountable for performance.

The General Assembly passes Act 73 which requires the State to conduct a comprehensive review of Vermont's HIT Fund, the Health Information Technology Plan, the VHIE and VITL. The State contracts with HealthTech Solutions to conduct the evaluation and present key findings and recommendations to the legislature in 2018. The report is published on November 15, 2017.

DVHA establishes the HIE Steering Committee to bring together a small group of key stakeholders to jumpstart the development of a statewide strategic plan and permanent governance model in accordance with the Act 73 report.

2018: CMS changes the name of the Medicaid EHR Incentive Program to the Promoting Interoperability Program to emphasize the shift in focus from the purchase of certified EHR technology, to meaningful exchange of data across health care systems. The MACRA/MIPs Quality Payment Program (QPP) is also rebranded under the Promoting Interoperability Program umbrella.

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[14] The Green Mountain Care Board (GMCB). (2012). *Policy on Patient Consent for Provider Access to Protected Health Information on VHIE or through the Blueprint.* 2014 revision retrieved here: http://hcr.vermont.gov/engagement/consent-policy.

[15] Act 79. *An act relating to health insurance, Medicaid, the Vermont Health Benefit Exchange, and the Green Mountain Care Board.* Sec. 40. (2013).

The VHIE commits to increasing usable records to 35% (from less than 20% in 2017), reducing duplicate records by 40% and addressing data quality issues.

The Vermont General Assembly passes Act 187 tasking the State and VITL with operationalizing the recommendations from the Act 73 Evaluation Report. The Act also authorizes the HIE Steering Committee to develop the statewide Health Information Technology Plan; requires DVHA and other stakeholders to produce a report on the State's consent policy; and changes GMCB's authority related to VITL (removing the Board's annual review of VITL's core activities) and the Health Information Technology Plan (requiring the Board to approve, reject, or request modifications within 45 days, after which the Plan will be deemed approved if the Board has taken no action).

The HIE Steering Committee delivers a strategic plan (the HIE Plan) to the GMCB on November 1, 2018.

Establishing a Framework for Success

Nationwide, it is anticipated that the exchange of health information supports an efficient health care system that effectively manages costs while promoting improved health and well-being. Many states have struggled with implementing an HIE program. Accordingly, a state-driven HIE program must be clear in its vision, goals, and accountability. To that end, this HIE plan covers three essential elements:

1. Vermont's specific vision and goals for the exchange of health data that express what the State aims to achieve.
2. The HIE ecosystem - the environment required for HIE to effectively function.
3. Clear objectives and a time-bound tactical plan - a clear path for achieving progress toward the vision.

The ideal state, or overarching goals, must be easily understood by stakeholders, policymakers, and the operator of the VHIE. Understandable goals will promote common expectations, accountability, and the likelihood that HIE vendors will meet the needs of health system stakeholders.

Strategic objectives provide clarity around the milestones that must be met to achieve each goal and a tactical plan describes the incremental steps which will be taken annually. To drive real progress, the tactical plan considers all parts of the ecosystem that must be addressed to achieve the State's goals including: governance, policy, financing, and technical infrastructure.

This structure of clear goals and objectives accompanied by an annually evaluated tactical plan is intended to drive financial sustainability, provide a framework for accountability, and promote adaptability and effectiveness.

The Value Proposition for HIE: Fundamental Goals

The HIE goals reflect what the State hopes to achieve through HIE to better the health and well-being of the people that live, work and play in Vermont.

In 2017, the HIE Steering Committee gathered use cases to articulate how individuals and organizations from across the continuum of care interact with, and rely upon, HIE tools and services. The use cases reflect current needs across the health delivery system and are intended to support ongoing planning efforts. The use cases represent a variety of needs ranging from public health reports that require the collection of disease data, to quality reports that measure efforts to improve process and outcomes, to the need for real-time notifications of changes to health status to effectively coordinate care.

The common threads across all use cases can be summarized in three 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. ***Improve Health Care Operations -*** Enrich health care operations through data collection and analysis to support quality improvement and reporting.
3. ***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.

The above goals are essential to a continuously improving health delivery system, however, there are underlying barriers to each, which are explained in greater detail in this section. If Vermont wants to build a health care system that uses resources efficiently and realizes the best possible health outcomes,

the State requires the right tools. HIE tools are critical to building an efficient and outcome-oriented health delivery system.

The HIE Ecosystem

The environment required for HIE to function effectively requires four pillars. Along with technology, these include a formalized governance structure, policy and processes that facilitate system goals, and a financial model that ensures resources are available to maintain and advance HIE systems. The following section includes an overview of the essential structural components of: Governance, Policy/Process, Financing (which could also be called Financial Sustainability) and Technology. The technical infrastructure is further delineated as Foundational, Exchange, and End-User Services.

This section includes a look at how the pillars of the ecosystem may mature over time to reach an ideal state. Though each pillar may evolve independently, consistent progress must be made across all pillars to ensure the foundation is in place to support achievement of HIE goals.

Figure 1: HIE Ecosystem
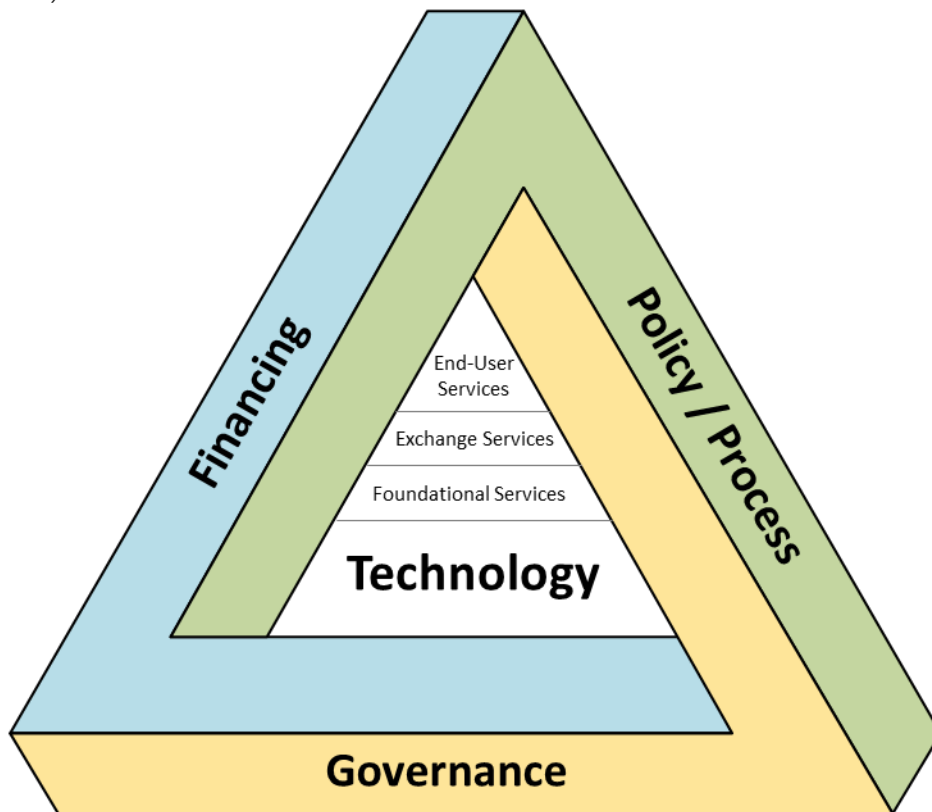
HIE Ecosystem: Governance

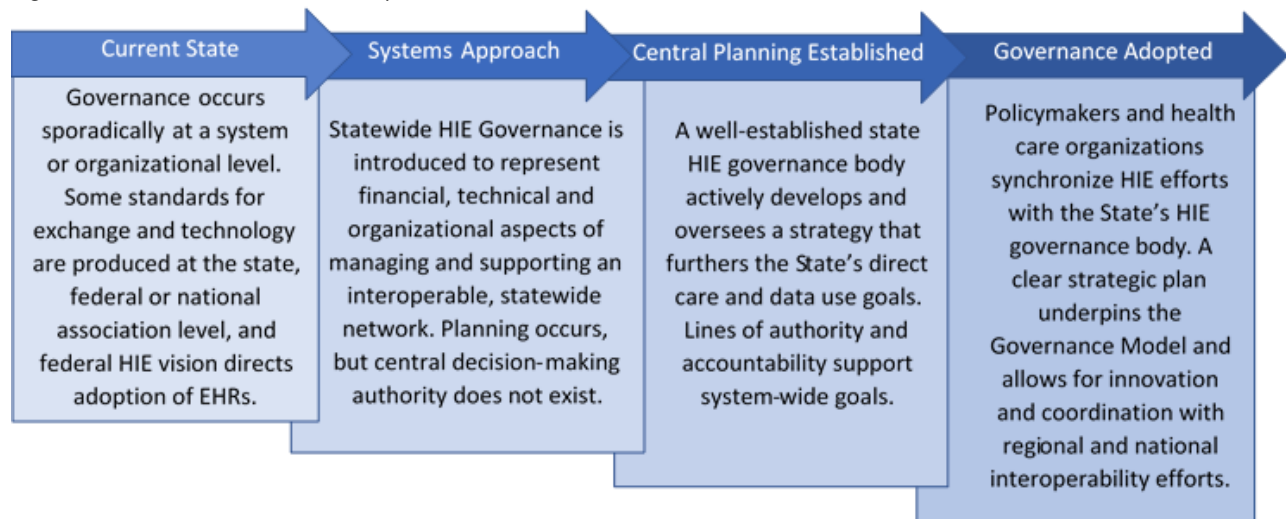Governance establishes the structure for effective leadership including the rules of engagement, decision making rights, and accountability, creating a trusted environment for sharing information. The Office of the National Coordinator[16] defines HIE governance as, "The establishment and oversight of a common set of behaviors, policies, and standards that enable trusted electronic health information exchange among a set of participants."[17] As noted in the 2017 Evaluation of Health Information Technology in Vermont, the State has lacked such a governance structure.[18]

In 2017, Vermont established an HIE Steering Committee to develop this plan. The Committee approached planning with a systems-wide focus, but was not acting or perceived as a centralized, statewide HIE governing body. The group worked to evaluate and offer a permanent HIE governance model that is intended to be established in 2019 (see *Governing HIE in Vermont* on p.24). This plan suggests formalizing the HIE Steering Committee as the core HIE governing body in Vermont. Through formal governance, Vermont will be able to align strategic investment and policy decisions to further present-day and future-focused health system goals. Figure 2 below offers a simple illustration of the current state and how governance may evolve to support the State's HIE vision.

Figure 2: HIE Governance Maturity Model

Current State	Systems Approach	Central Planning Established	Governance Adopted
Governance occurs sporadically at a system or organizational level. Some standards for exchange and technology are produced at the state, federal or national association level, and federal HIE vision directs adoption of EHRs.	Statewide HIE Governance is introduced to represent financial, technical and organizational aspects of managing and supporting an interoperable, statewide network. Planning occurs, but central decision-making authority does not exist.	A well-established state HIE governance body actively develops and oversees a strategy that furthers the State's direct care and data use goals. Lines of authority and accountability support system-wide goals.	Policymakers and health care organizations synchronize HIE efforts with the State's HIE governance body. A clear strategic plan underpins the Governance Model and allows for innovation and coordination with regional and national interoperability efforts.

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[16] The Office of the National Coordinator (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. The position of National Coordinator was created in 2004, through an Executive Order, and legislatively mandated in the Health Information Technology for Economic and Clinical Health Act (HITECH Act) of 2009.

[17] Daniel, J. G., The Office of the National Coordinator for Health Information Technology. (2014). *Health Information Exchange Governance.* Retrieved from https://www.healthit.gov/topics.
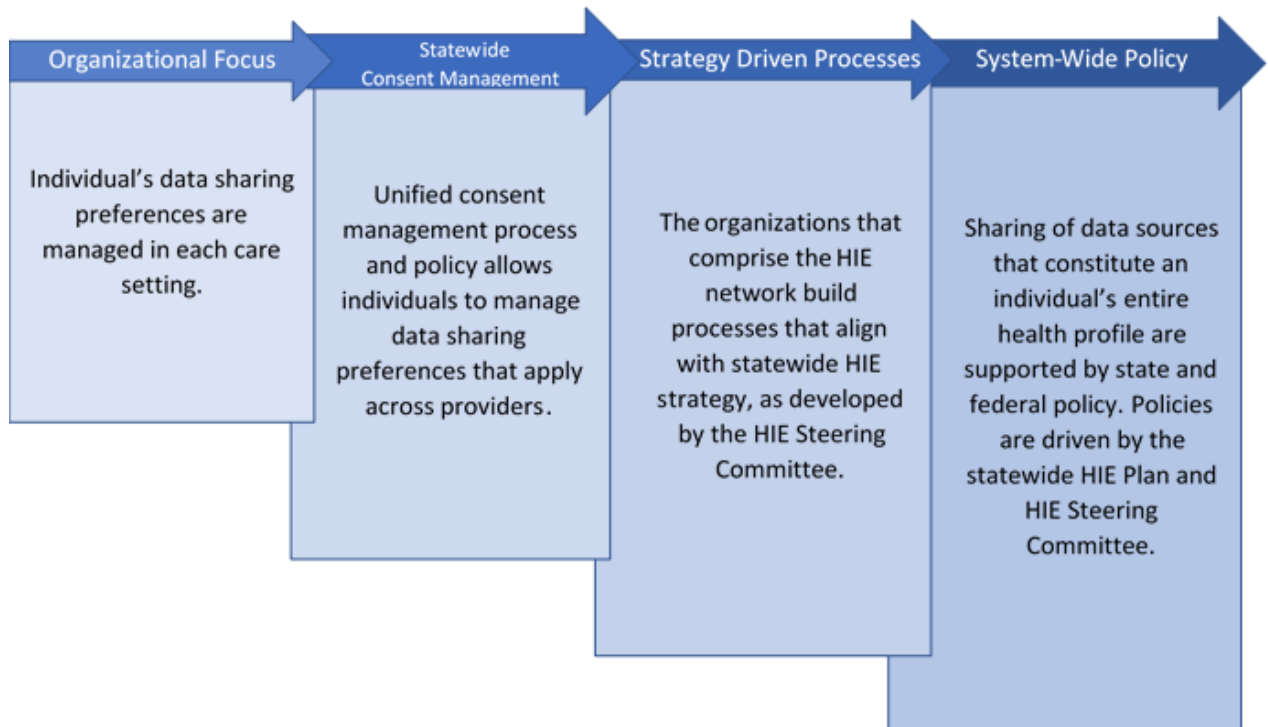
[18] Health Tech Solutions. (2017). *Vermont Evaluation of Health Information Technology Activities: Final Report*. Retrieved from https://legislature.vermont.gov/reports-and-research.

HIE Ecosystem: Policy & Process

Vermont's Legislature has repeatedly acted to ensure that HIE policies bolster the health care system. However, barriers remain, particularly in the policies that regulate consent to share health information. (See *Consent Policy and Management* on p.16). Vermont needs data exchange policies and processes that recognize individualized needs while supporting holistic care and system measurement and improvement. Figure 3 below sets forth an evolutionary path for Vermont's HIE Policy.

Vermont Act 187 of 2018 requires DVHA, in consultation with VITL, the Office of the Health Care Advocate, and other stakeholders to recommend policy on consenting to share health records using the VHIE to the General Assembly. This recommendation will be delivered in January 2019. The HIE Steering Committee will begin work in early 2019 to address policy challenges inhibiting HIE goals (see *Tactical Plan* on p. 30)*.*

Figure 3: HIE Policy and Process Maturity Model

Organizational Focus

Individual's data sharing preferences are managed in each care setting.

Statewide Consent Management

Unified consent management process and policy allows individuals to manage data sharing preferences that apply across providers.

Strategy Driven Processes

The organizations that comprise the HIE network build processes that align with statewide HIE strategy, as developed by the HIE Steering Committee.

System-Wide Policy

Sharing of data sources that constitute an individual's entire health profile are supported by state and federal policy. Policies are driven by the statewide HIE Plan and HIE Steering Committee.
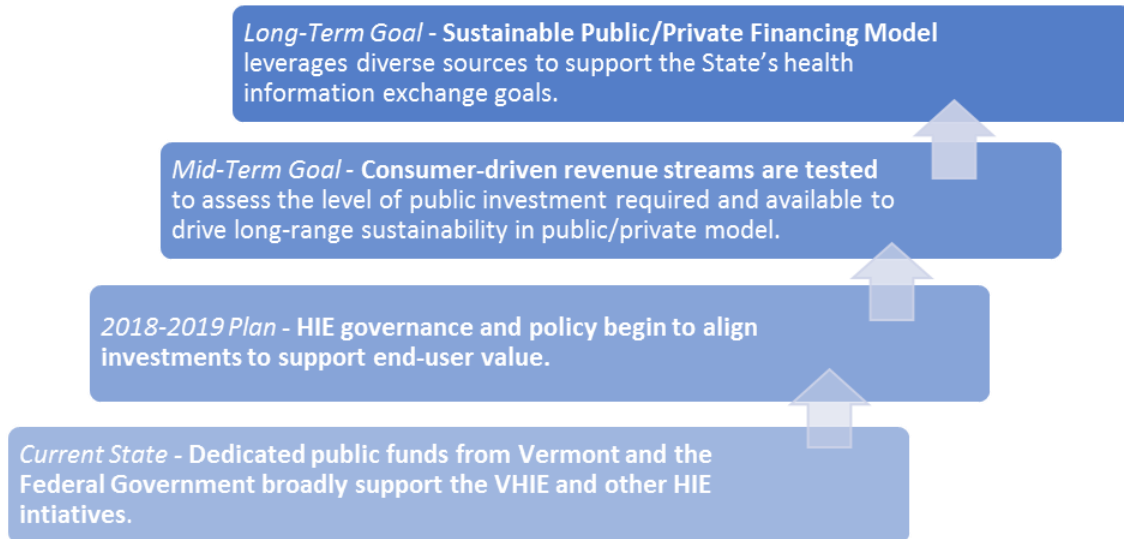
HIE Ecosystem: Financing

Predicated on the idea that HIE infrastructure is necessary to support health care delivery and operations, Vermont has made significant financial investments in the HIE ecosystem over the past decade with substantial support from the federal government. Management and continual renewal of the HIE infrastructure requires long-term, dedicated financing for services that support system users and a clear value proposition for those users to generate continued investment.

Since 2009, the State has expended over $20.6 million from the HIT Fund contributing to a total of $113,016,888.91 financing HIT/HIE activities.[19] As demonstrated by leading HIE systems around the nation, some level of public investment is needed. However, government does not have the ability to bear the entire financial burden of HIE in the long-term, necessitating an equitable public-private funding model that allows public funds to target broad-reaching foundational components of HIE and consumer demand to drive development of fee-based services and tools.

A sustainable financial model for HIE must draw support from the stakeholders who benefit from it as well as from the State, which recognizes the critical role it plays.[20] The HIE model on which this plan is based initiates an evolution from the current state of close to full reliance on public funds, to a sustainable public/private model. (See more on HIE Sustainability and building an HIE financing model on p.35-36.)

Below is a depiction of how the HIE Steering Committee envisions the HIE financial model evolving over time toward a sustainable state.

Figure 4: HIE Financing Maturity Model

Long-Term Goal - **Sustainable Public/Private Financing Model** leverages diverse sources to support the State's health information exchange goals.

Mid-Term Goal - **Consumer-driven revenue streams are tested** to assess the level of public investment required and available to drive long-range sustainability in public/private model.

2018-2019 Plan - **HIE governance and policy begin to align investments to support end-user value.**

Current State - **Dedicated public funds from Vermont and the Federal Government broadly support the VHIE and other HIE intiatives.**

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[19] State of Vermont Agency of Administration. (2018). *Health Information Technology Fund Annual Report per 32 V.S.A. § 10301(g).* Retrieved from https://legislature.vermont.gov/reports-and-research.
[20] Health Tech Solutions. (2017). *Vermont Evaluation of Health Information Technology Activities: Final Report*. Retrieved from https://legislature.vermont.gov/reports-and-research.

HIE Ecosystem: Technology

Discussion of HIE tends to focus on technology. The HIE Steering Committee respectfully believes that this focus is myopic, which is why technology is just one part of the HIE Ecosystem described in this Plan. The Steering Committee is acutely aware that it must remain focused on what successful HIE looks like while leaving the technology to services providers like the VHIE.

Relying on national guidance from the Office of the National Coordinator and an assessment of Vermont's HIE use cases, the HIE Steering Committee identified the components that must be in place for Vermont to achieve its HIE goals and to provide the value that end-users of the system require and rely on.

Each of the components of HIE is multi-faceted, and most are dependent on a strong modular technical architecture (system of standardized, connected parts). Overall, these components constitute a three-level service model which is supported by stable Governance, Financing and Policy/Process, as shown in Figure 5.[21] The ultimate value to users is evident in tiers two and three: Exchange and End-User Services. Tier one (Foundational) is required to enable tiers two and three.

Figure 5: HIE Conceptual IT Services Model
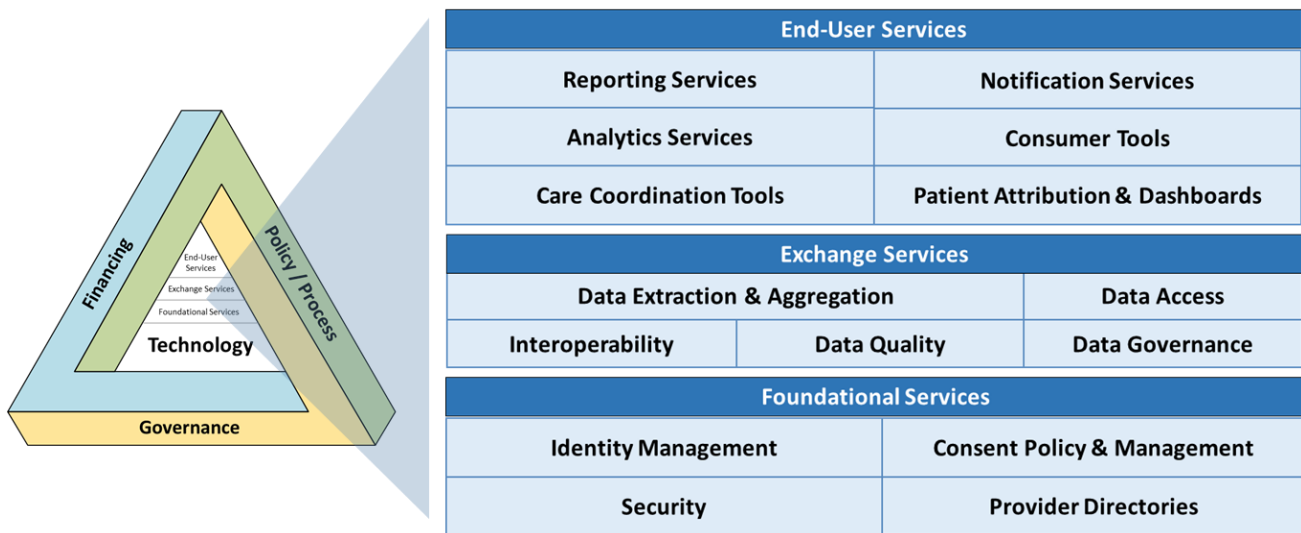
The long-term vision for sustainable HIE considers the Foundational and Exchange layers as the primary areas for public investment supporting and enabling the creation of end-user services, under the control of stakeholders, which provide the ultimate value: complete health information structured in a longitudinal record and data to support multiple, expanding data analytics needs.

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[21] Note: The Office of the National Coordinator developed a graphic to illustrate the Health IT Modular Functions needed to support effective health information exchange. Informally this graphic is referred to as the "ONC Stack". The HIE Steering Committee further adapted this concept to emphasize foundational functions (or services) of exchange, and how the functions may be built upon to enable development of end-user services. Vermont's HIE Conceptual IT Services Model is intended to ground discussions in a shared nomenclature for strategic planning purposes.

Natarajan, A. (2015). *Health Information Technology (HIT) Toolkit for Advancing Medicaid Transformation (slide 8)*. Office of the National Coordinator for Health Information Technology. Retrieved from: https://www.healthit.gov/topic/innovation/state-innovation-model-resource-center.

Today in Vermont there are major redundancies, gaps, and inefficiencies in the HIE system and the assignment of responsibility among stakeholders is unclear, redundant, and inefficient. The HIE Steering Committee will be responsible for driving development to meet the strategic HIE goals, which may mean eliminating, replacing and/or consolidating some aspects of the HIE system's component parts. The following sections explore the current state specific to many of the key HIE services. The HIE Objectives & 2018-2019 Tactical Plan section (p.29) documents the near-term steps to address these challenges and Future HIE Planning section (p.36) describes some of the factors that will drive longer term planning.

The following portion of this section describes core services, the envisioned ideal state for each service, and the key challenges to consider as the State and its partners work to realize the promise of HIE.[22]

Foundational: Consent Policy and Management

The Federal Health Insurance Portability and Accountability Act – better known as HIPAA – contains a privacy rule that allows health care providers to share a person's health information for treatment purposes without first gaining the person's consent.[23] Many states, including Vermont, have more restrictive consent-to-share policies.[24]

Vermont's consent-to-share rule requires individuals to "Opt In" meaning that they need to confirm that they would like to have their health record accessible to all treating providers. When asked, over 95% of Vermonters consent to share their data, however, only 30% of Vermonters have been asked to share their health records via the VHIE.[25]

Vision: The health system is supported by consent policies and technologies that allow for **simple management of consent preferences to enable transfer of data supporting a person when and where they need care.** Consent management is not seen as burdensome, and associated policies and processes are reflective of federal and state law.

Key Challenges:

  ➢ **Technical Limitations** – Consent to share information must be collected and managed electronically. Providers collect individuals' consent to share information via the VHIE in their offices, and the VHIE manages the process. Consent is captured in many places and therefore must be managed as a distributed system. Today, this is happening inconsistently, and often requires that a clinician interrupt clinical work to open a separate application to log consent preferences or ask their administrative staff to do so. In the past year, VITL has worked with two organizations to improve the process for transmitting consent data directly from the EHR to the VHIE, eliminating a step in the process.

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[22] Note: There are other services and capabilities that are not explained at length in this plan – such as system security – but are fundamental to functional health information exchange systems, services and tools. Additionally, there are health information exchange tools that may be of great use to individuals and organizations across the health delivery system but are not identified in End User Services as the Conceptual IT Services Model is intended to be instructive, not comprehensive.

[23] US Department of Health and Human Services. (Created 2003, Last Reviewed 2013). *FAQ 481-Does HIPAA permit health care providers to share information for treatment purposes without authorization*. Retrieved from https://www.hhs.gov/hipaa/for-professionals.

[24] Green Mountain Care Board. (2014). *Policy on Patient Consent for Provider Access to Protected Health Information on VHIE or through the Blueprint.* Retrieved from http://hcr.vermont.gov/engagement/consent-policy.

[25] Health Tech Solutions. (2017). *Vermont Evaluation of Health Information Technology Activities: Final Report*. Retrieved from https://legislature.vermont.gov/reports-and-research.

➢ **Substance Use Disorder Data** – Due to both perceived and real restrictions on sharing Substance Use Disorder (SUD) treatment data, evolving federal regulations, and associated legal ramifications, if a person has SUD treatment recorded in their health record, in most cases, the full record is not exchangeable across care settings. Often, SUD provider records of care do not include a person's full clinical history because of restrictions on including SUD providers in the general exchange network. Conversely, other treating providers do not have the benefit of understanding a person's complete clinical needs as SUD data is absent from general records. Currently, the VHIE cannot manage SUD data apart from other medical data and many EHR systems cannot separate sensitive data types when sharing with the VHIE; therefore, records containing SUD treatment information cannot be shared. This challenge will remain so long as sharing requirements are limited by laws or regulations and as long as consent processes remain onerous to clinical staff.

Foundational: Person and Provider Identity Management

All health information systems must match individuals to their health records. Record matching is challenging in any environment given the frequency with which key demographics (name, age, gender, address, etc.) change. Quite apart from the demands of statewide information exchange, each health care organization must acquire and maintain the capacity to match records against a constant stream of changes in the population they serve. A master patient (person) index (MPI) cross references records that may have medical record identifiers from different source systems or different forms of demographic information, which is routine when names or addresses have changed or are recorded differently or in error. Where MPIs can rely on consistent coding of demographic information, they can match people to their records automatically with a high degree of confidence. There are always cases which get flagged for human review, which is more likely when source data is inconsistent, missing, or improperly coded.

In Vermont, identity matching occurs within each health care office or health system and separately across multiple data systems, including the Vermont Clinical Registry operated by the Blueprint for Health, the Department of Health's multiple data registries (Immunization, Cancer, Birth/Death, etc.), the VHIE, OneCare's Care Navigator system, payer claims systems, VHCURES (claims database), and others.

Vision: Health information exchange systems are provided with consistent information which feeds matching software that optimizes automation and minimizes human review such that **dependent systems reliably match people to their records with minimal manual intervention**.

Key Challenges:

➢ **Multiple Fail Points** – Identity matching to support the exchange of health data is dependent on accurate, robust and up to date source data, the technical capability to manage the source data, and where confidence is low, human review. Failure at any point in the process can render the resulting record incomplete or incorrect. On a statewide scale, human review can be a significant drain on resources.

➢ **Technical Limitations** – HIE systems often struggle with consistently matching records due to the great variety of records they are required to aggregate and the lack of a national patient identifier to link a person across care settings. As noted in the 2017 Evaluation Report, there are more "unique" records in the HIE than there are people in Vermont. DVHA's July-December

contract with VITL stipulates a 40% reduction in duplicate records by December 31, and as of this writing, they are on target to meet this goal.

Exchange: Extraction and Aggregation of Health Data & Records

The VHIE seeks to make a person's health information available every time they seek care regardless of who their providers are or what insurance they may or may not carry. An HIE can do this by centralizing information or by providing on-demand access to information stored in de-centralized repositories. In either case, the HIE is responsible for connections that stream health record data from individual provider's EHR software on pre-defined triggers or on request.

In addition to making an individual's records available to other treating providers, data can be centralized and aggregated by the HIE and by subscribing institutions and used for population health analysis, quality assessment/improvement, and public health reporting.

Vision: **Accurate and complete personal electronic health records are available** from all treating providers and aggregate clinical data is available **to support quality care, evaluation and continuous, quality improvement** within a learning health system.

Key Challenges:

➢ **Unstructured Data** – Most information that is captured electronically is not structured, instead, it contains natural language (text or narrative). The norm is that approximately 80% of clinical information is unstructured and likely to remain so. An increasing number of analytic systems take this into account and leverage text and natural language processing algorithms which are increasingly accepted as mainstream technology, however, most analytic systems today do require structured and coded information.

➢ **Uneven EHR Adoption** – Many clinicians participate/d in a program that provides incentive funds for the adoption and "Meaningful Use" of Certified EHR systems. The program has issued more than $55 million in Vermont to date to support providers in purchasing health record systems. However, many providers, including many long-term care, behavioral and mental health providers may have little or no eligibility for these incentives. The cost of EHR systems have been prohibitive to some and these sectors have been underserved by EHR developers as many EHR products have not been customized for specialties such as mental health and long-term services.

➢ **Misaligned Requirements** – Some data points that are critical for quality assessment or public health reporting are not collected routinely in the delivery of care. In this case, additional staff time is required for documentation and record systems may require customization to support data collection requirements.

➢ **Decentralizing Workarounds** – Due to restrictions on sharing of SUD data and concerns about the viability of the VHIE, other systems have evolved to do some form of electronic aggregation (e.g., Vermont Clinical Registry, Immunization Registry). Large individual health care systems, such as the UVM Network, also aggregate records on behalf of clients and providers. While aggregation at multiple points may be a viable solution, interoperability is required for effective data exchange across systems. The current de-centralized nature of data aggregation is not connected to a strategic plan and therefore rationale is unknown.

➢ **Unsustainable Costs** – Traditionally, the State – with partial support from the federal government – has covered the cost of connections between EHR systems and the VHIE. Connections are required to send data to the VHIE for aggregation. Funding is directed to VITL for their services, and in some cases, to the health care organization to offset vendor costs associated with custom work required on the EHR system itself. Every time a provider changes companies or upgrades their system, new connections must be established for transmission and aggregation of individual types of health data. Each of these updates costs time and strains limited financial resources.

➢ **Disparate Data Sources** – Many EHRs struggle to integrate new data sources including clinical devices, remote device data from personal health care applications, patient-reported information, and genomic data. The social determinants of health increasingly recognized as vital for understanding individual's care needs are not captured in all certified EHRs and standards for their exchange are lacking.

Exchange: Data Quality

Interoperability supports the basic connectivity of systems. However, for information to be usable across the HIE network, it must meet data quality criteria to ensure that the information is accurate and complete. Formats for electronic health information define how to represent concepts such as "diagnosis", "allergy", "medication", or more complex constructs such as "history of present illness" or "hospital course". Beyond defining the concepts, data must share a common set of codes representing the actual findings. For example, codes medication including drug, how it is to be taken, and at what frequency and duration.

Under Vermont Title 18, VITL must "establish criteria for creating or maintaining connectivity to the State's health information exchange network" and provide the criteria, known as Connectivity Criteria, to the Green Mountain Care Board for approval. The Connectivity Criteria leverages existing standards and establishes basic conditions for EHRs to connect to the VHIE. Through legislative mandate and supported by contracts with DVHA, VITL continues to revise the Criteria to enhance the focus on ensuring that connections produce higher quality (usable) data and support effective identity matching.[26]

> *"Data Governance (DG) is defined as the exercise of authority and control (planning, monitoring, and enforcement) over the management of data assets. All organizations make decisions about data, regardless of whether they have a formal Data Governance function. Those that establish a formal Data Governance program exercise authority and control with greater intentionality. Such organizations are better able to increase the value they get from their data assets."*

Data governance[27] is a process for managing data quality issues. Some institutions in Vermont utilize data governance methods, but there is no centralized data governance that unites the disparate components of the health system, nor are there comprehensive, consistent uses of data governance within statewide entities.

Vision: Governance, operations, and technology across the State **ensure that health data is accurate, consistent, and complete to meet Vermont's high priority data usage needs**.

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[26] Green Mountain Care Board. (2015). *Criteria for Creating or Maintaining Connectivity to the Vermont Health Information Exchange (VHIE).* Retrieved from https://gmcboard.vermont.gov/documents/publications/decisions/connectivity.

[27] DAMA International. (2017). *DAMA-DMBOK: Data Management Body of Knowledge (2nd Edition),* Ch. 3. ©2017 by DAMA International. Retrieved from https://www.safaribooksonline.com.

Key Challenges:

- **Limited National Standards** – Federal standards for clinical records focus on the most commonly used concepts (problems, medications, allergies, demographics). These data points, while essential, are rarely if ever sufficient to represent an entire clinical record. Federally certified EHRs need to demonstrate compliance with these minimal coding requirements, yet are not tested in production mode, and in practice, rarely meet the requirements of the standards.

- **Variation in Standards** – Standardization of concepts began 30 years ago and there are systems supporting several generations of "standard" concepts. Older systems in use may struggle to support the new standards. Systems struggle to both keep pace and to balance precision with simplicity of operation.

- **Enormity of Data Types** – Classification and assignment of unique identifiers to the elements within a health record, called controlled terminologies, are many and massive. The primary terminology for defining clinical results[28] contains over 250,000 concepts, each with multiple terms and variations. This code set evolves and grows on an annual basis reflecting the progress of medicine and shifting interpretation of disease. There are separate code sets for medications, lab orders and results, nursing notes, and procedures, to name just a few. The great volume and variety of data causes challenges for any system attempting to generate or interpret information. Organizations like the VHIE try to make data as useful as possible by deploying terminology service applications to standardize data using a common set of terminology and codes.

- **Process Management Required** – Data quality is a management issue as much as it is a technical issue. Data governance, a process for managing the "availability, usability, integrity and security" of data is required for any cross-system effort to be fully effective. Imposing consistency through a process of data governance is challenging considering all the organizations, systems and individuals involved in health information exchange across any state.

- **Source Issues** – Where data has been shared and is available, it is often of poor quality from the source systems which inhibits its use by clinicians, analysts, and, in the case of poor-quality demographics, it inhibits identity matching. Many years ago, the Blueprint for Health created the "Blueprint Sprints" process to address data quality issues at the source (i.e., with the provider entering data into the EHR). While the Sprints are effective and improve data used for program analysis, they are labor intensive and require costly technical support from an outside vendor and VITL. Other groups, such as Bi-State Primary Care Association, Vermont Care Partners, and OneCare Vermont, have also undertaken efforts to manage data quality issues at the source to make data useable for analytics purposes.

Exchange: Interoperability

Interoperable systems share basic protocols that support the import and export of information such that it can be used by any of the connected systems. The most widely used set of such protocols are the simple ones that underly the World Wide Web. HIE requires sophisticated protocols to protect security and confidentiality and to support sharing of data as complex as clinical information. Today the VHIE transmits data to OneCare Vermont's systems, the Clinical Registry operated by the Blueprint for Health, the Department of Health's Immunization Registry and DVHA's care management solution. However,

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[28] SNOMED International. https://www.snomed.org.

these receiving systems cannot transmit data back to the VHIE (via automation) or share with other systems.

Interoperability is also an area of concern nationwide. The U.S. 21st Century Cures Act called for the ONC to develop a framework to enable network-to-network exchange of health data to support interoperability nationwide and to address the problem known as "data blocking" where non-technical factors prevent sharing information as needed. The final framework and the data blocking approach are to be released to the public in late 2018.

Vision: HIE is supported by industry standards, lowering the bar to entry and creating an environment where basic **connectivity across health systems is routine, inexpensive, and reliable**.

Key Challenges:

➢ **Systems not Designed to Connect** – Clinical systems have been designed to support a single care setting (e.g., a hospital, a hospital emergency department, a primary care doctor's office). The ability to connect with other systems is frequently an added capability, outside the core design of the system. Each time systems are upgraded, the structure or coding of key data elements can change, creating additional demands on IT services within the organization and by the HIE. IT maintenance requires dedicated financial and human resources.

➢ **Misaligned and Complex Standards** – Historically, HIE connectivity standards have been overly complex. There has been a movement since the early 2000's to adopt general IT interoperability standards that is gaining traction such that the emerging standards lower the bar considerably, however, they have not yet been adopted in regulation or widely applied within the industry.

➢ **Variety of Source Systems** – In a single site (e.g., a hospital or primary care practice), multiple clinical information systems are likely to be in place, with varying levels of compatibility among systems. The average hospital has ~16 sources of electronic clinical information including general and specialty EHRs, emergency department and surgical systems, lab and imaging information systems, image archives, and medical records systems containing narrative notes.

➢ **Lack of Systems** – Not all health care organizations have electronic systems of any kind with which to interoperate. For example, in long term post-acute care the most common information gathering and reporting tools are specific to practice management and reimbursement and do not support interoperability of clinical information. Social service providers, schools, and other entities working on issues that impact health have little or no capacity to electronically share information with the health care community.

➢ **Perverse Incentives** – Business models can be disincentives to information sharing. For example, where information sharing across practices makes it easier for individuals to seek fee-based services at competing provider organizations. This also manifests in technology vendors charging prohibitively high prices for services or for use of existing systems. The ONC continues to work on national policy to combat examples of "patient profiteering" and "data blocking".[29]

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[29] Verma, S. (2018). Centers for Medicare and Medicaid Services, *Remarks by Administrator Seema Verma at the ONC Interoperability Forum in Washington, DC.* Retrieved from https://www.cms.gov/newsroom.

Exchange: Access to Health Record Data

EHRs provide point of care data collection and point of care access to information for clinicians. Care delivery and care coordination, however, require access to data collected outside any single point of contact with an individual (e.g., primary care visits, labs, hospital care, emergency or urgent care, specialist care). Accessing information collected outside the current point of care is a core service of an HIE.

Currently, the VHIE offers providers access to health records via a provider portal called VITLAccess. Some VHIE customers can also query the HIE directly from their EHR systems. Today, the provider portal is not widely used, and the query service is limited. When asked, Vermont stakeholders feel it would be most useful to have health data from other sources directly integrated into their own systems, thereby reducing the burden of using more than one system and allowing them to rely on a system with which they are familiar.[30]

Vision: **Seamless access to needed data** is enabled by proper security, consent and data management protocols, and end-user focused technologies (e.g., VHIE aggregated data integrated directly into EHR systems).

Key Challenges:

➢ **Basics Must be in Place** – The capacity of an HIE to compile and present information is only as great as the quantity and quality of data which it can access. Each of the core services described above are essential to providing basic access to data to HIE users. HIE data is limited by the information sharing capacity of the heterogeneous source systems which, as noted, themselves may not have critical information in a compatible format for sharing.

➢ **No Standard View for Consumers** – Vermont does not have a statewide mechanism for providing individuals with access to their own electronic health records. Individual health systems or payers may offer this view via patient portals, but it is likely that the data available is only related to the organization offering the system.

A Current Use Case

Figure 6 offers a simple view of the current state to depict how an individual's data may flow through the current HIE network of systems. The illustration shows that there are many component parts in the system. Some complexity may persist, but the HIE Steering Committee will aim to minimize redundancies and create efficiencies wherever possible with a focus on reducing provider burden.

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[30] Capitol Health Associations. (2018) *Contingency Plan for the Vermont Health Information Exchange*, Sec. 15.3. Retrieved from https://legislature.vermont.gov/reports-and-research.

Figure 6: Simplified HIE Data Flow Example
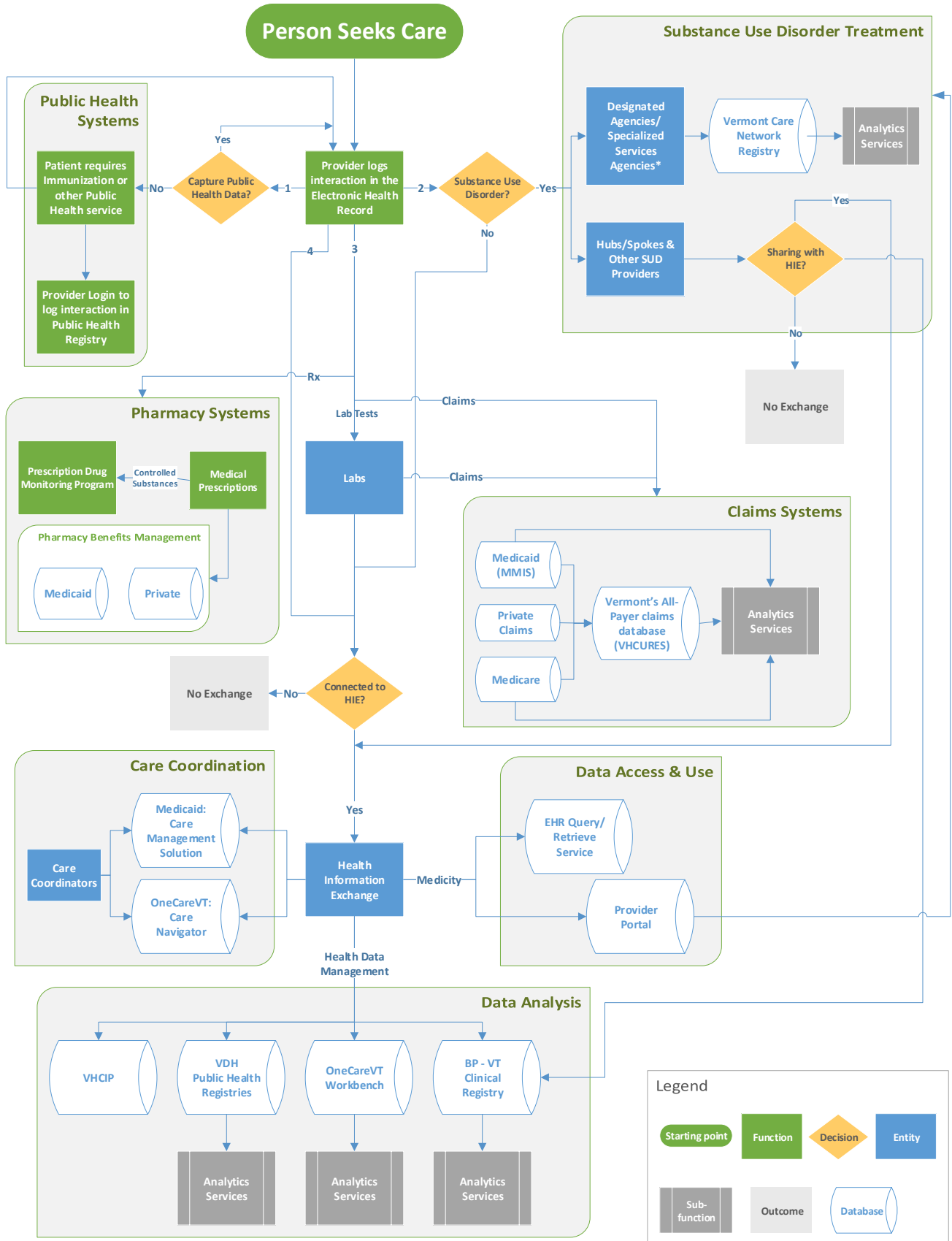
Governing HIE in Vermont

HIE governance in Vermont has evolved along with the industry – first with a central focus on strategic planning conducted by the operator of Vermont's HIE, VITL, and then more broadly encompassing health system stakeholders through Vermont's Health Care Innovation Project (State Innovation Model) Health Data Infrastructure Workgroup.[31]

> Excerpt from the Executive Summary of the 2017 Evaluation Report
>
> *"Vermont is not organized in a way that increases its chances for success. Currently, no group or organization is solely responsible for the execution of HIE activities in the state, and there is no statewide strategic plan guiding time constrained HIE investments…Better governance and planning is attainable - other states have successfully developed governance and oversight models, which Vermont could replicate."*

As the State Innovation Model project entered its final months, a new Administration began its work and took a new approach. Per Act 73 of 2017, DVHA contracted with a third-party evaluator to fully understand long-standing challenges in Vermont's HIE landscape and identify a path forward. Among many other essential pieces, the evaluator highlighted the importance of HIE governance and an HIE strategic plan that should be developed by a state-wide governing body.

As the evaluation concluded in November of 2017, the Department requested Steering Committee membership from a small group of HIE subject matter experts, many of whom had worked together on the State Innovation Model project. The purpose of the HIE Steering Committee was to help the Agency of Human Services (a) understand the role of the State in facilitating access to tools and data to the health care community to enhance/improve the health of all Vermonters, (b) create a plan that reflects this role, (c) oversee the timely execution of that plan, and (d) evaluate the plan's effectiveness. See the Committee's charter (*Appendix A*).

Developing a Sustainable Governance Model

In 2018, the HIE Steering Committee met with the authors of the 2017 Evaluation Report to learn about their assessment of Vermont's governance needs and best practices from other states (9 others were included in the evaluation). Additionally, the Committee met with the operator of Oklahoma's HIE and learned about the formation of a long-lasting and foundational strategic plan through a concerted governance effort. The Steering Committee also reflected on work done in 2016 through the State Innovation Model project to establish statewide governance.

As a component of their research, the HIE Steering Committee reviewed Michigan's model, which unites a group of users and subject matter experts as the "HIT Commons" to set HIE policy for the State. Policies are implemented by the Michigan Health Information Network (MiHIN), which describes itself as, "a public and private nonprofit created for the purpose of coordinating and building the bridges between the health care providers throughout the state. From hospitals to pharmacies, MiHIN is creating the technology and resource needed to make sure that the electronic health records of Michigan citizens are available for all that provide care."

MiHIN has a Board of Directors who act to ensure that policies set by the HIT Commission are effectively implemented within the Michigan network. There is also an Operations Advisory Committee that oversees working groups that advice MiHIN.

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[31] State of Vermont Health Care Innovation Project. (2018). Retrieved from http://healthcareinnovation.vermont.gov.

The 2017-2018 HIE Steering Committee proposes the establishment of a permanent HIE Governance Model for the State of Vermont. The Governance Model includes a single body, called the HIE Steering Committee, responsible for convening key HIE stakeholders to develop and oversee execution of a statewide HIE strategic plan. This includes consistent assessment of user needs, evaluation of market trends, and targeted action in accordance with the foundational goals and objectives laid out in the strategic plan.

The HIE Governance Model is intended 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.

Where do stakeholders convene to discuss HIE matters, set priorities and propose policy?	HIE Steering Committee	The HIE Steering Committee develops, executes and evaluates the HIE Plan and monitors HIE performance with operational and administrative support from DVHA's HIE Unit.
Where do decision makers go for support?	Stakeholder Advisory Groups	The HIE Steering Committee actively leverages insights and expertise from existing stakeholder advisory groups and creates ad-hoc committees when needed.
Who is responsible for oversight?	Green Mountain Care Board	The GMCB approves the statewide HIE Plan and VITL's budget.
Who provides HIE services?	VHIE & Other HIE Service Organizations	The VHIE and other HIE service vendors such as Bi-State Primary Care Association and OneCare Vermont.
How are service providers held accountable?	Performance-Based Contracts	The Steering Committee sets strategy to drive investment and works with DVHA and other contract owners to ensure contracts drive performance goals.

Per the recommendations in the 2017 Evaluation Report, this Governance Model includes administrative and operational staff to support the HIE Steering Committee, a volunteer-based group consisting of professionals. This role will be filled by DVHA's current HIE Team, as they are staffed and familiar with the processes and management of the State's publicly driven HIE activities.

Also represented in Vermont's HIE Governance Model is the GMCB's role in reviewing and approving the statewide HIE strategic plan.[32] Annually, DVHA, in collaboration with the HIE Steering Committee, is required to present the strategic plan to the GMCB for review on or before November 1.

While this model offers a great improvement over the current state, it does not eliminate the oversight entities involved with the VHIE including the HIE Steering Committee (strategic direction and monitoring), DVHA (contract manager), the VITL Board (oversight of VHIE operations), and the GMCB (approval of VITL budget). In its first year of establishment, the HIE Steering Committee will continue to assess the roles of stakeholders. The HIE Plan, updated annually, will be a mechanism for recommending refinements to the model to best support statewide HIE goals.

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[32] 18 V.S.A. § 9375(b)(2)(A)

Steering Committee Roles & Responsibilities

As previously noted, the 2017-2018 Steering Committee began their work by gathering HIE use cases to better understand specific HIE needs. Based on the needs and challenges presented in the use cases, the Steering Committee recommends that the permanent governing body consist of representatives from the following groups.

- Vermont's Agency of Human Services (Chair)
- Vermont's Department of Health
- A Payer (insurance carrier)
- A Minimum of 3 Provider Representatives (in service of patients) of:
  - Primary Care
  - Mental Health
  - Substance Use Disorders
  - Disability and Long-Term Services and Supports
  - Hospital Care
- A Person who Engages with the Health Care System
- An Accountable Care Organization
- The Blueprint for Health Program

Non-voting members will include, but not be limited to, representatives from:

- The Green Mountain Care Board
- The Agency of Digital Services
- The Department of Vermont Health Access' Health Information Exchange Unit
- VITL, VHIE Operator

Steering Committee members will be invited to participate by the Agency of Human Services. Each member will be selected based on their related experience and expertise.

The HIE Steering Committee's responsibilities include:

- 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.
  - Identifying alignment opportunities to further integrate the statewide data management architecture.
- Support DVHA and other stakeholders in focusing HIE investments to align with statewide HIE goals.
  - Monitor HIT Fund expenditures and other state-driven HIE investments and identify opportunities for greater diversity in HIE funding sources.
  - Review federal funding requests managed by AHS to ensure alignment with statewide strategy.
  - 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.
- 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.

Figure 7 depicts the anticipated timeline for the HIE Steering Committee from late 2018 through 2019.

Figure 7: HIE Steering Committee Timeline
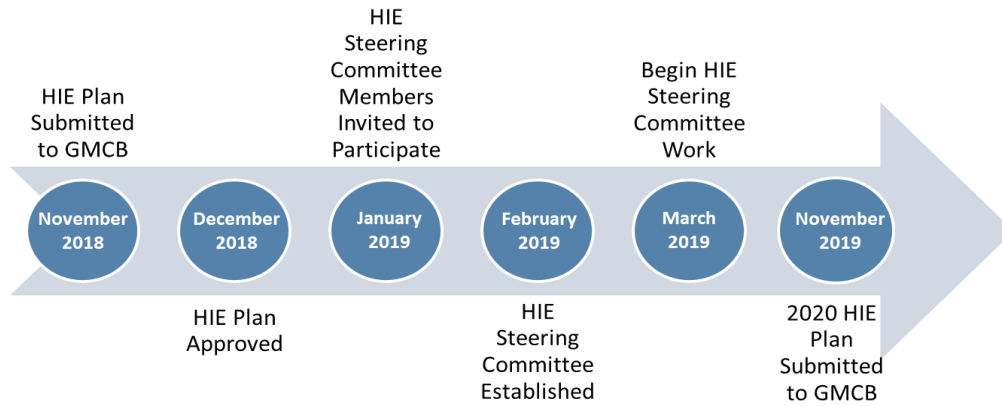
HIE Objectives & 2018-2019 Tactical Plan

The objectives below describe *what* the State needs to achieve the goals of HIE, allowing planning for *how* progress will be made toward each. The objectives are aspirational milestones and the Tactical Plan that follows provides a checklist of tasks to be done in 2018-2019 in pursuit of these objectives and goals. Although each objective is listed in connection with a specific goal, most objectives will further all three HIE goals.

Goal: Create One Health Record for Every Person

To ensure data is available to providers when they need it, the system requires that each person have an electronic health record, often referred to as a Longitudinal Health Record. This record must include a complete, historical view of care that spans transitions of care and insurance carriers and which is secure and confidential yet accessible, under reasonable permissions, to each person and their designated care team, including relatives and friends. Viewing the health record should not add additional burden to provider operations. To support this goal, the State and its partners strive to:

- Define the requirements (what must be included) of a Longitudinal Health Record.
- Create an easy-to-navigate Longitudinal Health Record for all people accessing Vermont's health system.
- Empower people to participate in their care by providing them access to their secure and complete health record.
- Provide a straight forward mechanism for managing personal data sharing preferences.
- Further real-time exchange of health records to support direct care, care coordination, and efficient transitions of care.
- Remove policy, process, and economic barriers to ensure complete health data follows the person and are not "stuck" in information silos.
- Support adoption and use of electronic health records and other technologies across the full spectrum of care delivery.

Goal: Improve Health Care Operations

Health care delivery and management in Vermont relies on and requires an array of data sets to support an ever-expanding need for analysis of health system's performance. Today, the needed data acquisition and aggregation are supported unevenly and inconsistently, and the burden often falls more heavily on smaller practices. To fully support health systems in using real data to bolster operations, the State and its partners strive to:

- Define the priority elements (information) required to support health system reporting and analysis.
- Integrate data sources to seamlessly represent a person's entire health profile into one record for those measuring care systems and providing care and services.
- Provide designated health care organizations and programs with high quality, reliable data to support measurement and reporting needs of various groups and users.

Goal: Use Data to Enable Investment and Policy Decisions

The information required for data-informed delivery and management is produced in a learning cycle where care delivery provides data that is in turn used for population-wide analysis. Data becomes a tool to support action, whether focused on creation of public policy or investments in resources or programs. To bolster the health system's ability to learn and improve, the State and its partners strive to:

- Integrate systems and coordinate stakeholder efforts in support of continuous improvement goals.
- Provide policy makers and health system stakeholders with aggregate data to support evaluation and program decision making.
- Support health care organizations and programs with access to aggregate data to inform investment decisions that maximize use of limited resources and promote positive health outcomes.

2018-2019 Tactical Plan

A tactical plan translates strategy into achievable actions that support long-term goals. Vermont's HIE Tactical Plan will be developed annually and constantly monitored and refined by the HIE Steering Committee. The HIE Tactical Plan identifies actions related to maturing all core services and furthering the three HIE goals across the dimensions of: Governance, Technology, Policy/Process and Financing. An accountable party is assigned to each tactic to ensure it is clear who is responsible for which aspects of the work.

The 2017 Vermont Evaluation of Health Information Technology Activities Report demonstrated that, most stakeholders feel that it's essential to have HIE services. To ensure that the HIE activities in 2018-2019 instills trust in stakeholders, and set HIE efforts on a solid, strategic path, the Tactical Plan is focused on achievability and setting a strong foundation for future growth and development.

The 2018-2019 Tactical Plan focuses on enhancing foundational and exchange services in support of future and existing end-user services. The specific focus for 2018 and 2019 is:

- Establishing the permanent governance model for the HIE
- Incremental progress in:
    - Consent management
    - Data quality
    - Identity management
- Initiating long-term, sustainable financial planning
- Overseeing the 2018-2019 plan and developing a 2020 plan, including a technical roadmap

Considering the importance of strategic, incremental progress, the Tactical Plans below are intentionally written as check-lists as a simple mechanism for tracking the completion of necessary work.

Foundational Components, 2018-2019		
Accountable Party	**Area of Focus**	**Activity**
HIE Steering Committee	HIE Governance	☐ Establish an HIE Steering Committee ☐ Annually, engage stakeholders in the development of a Strategic Plan for the GMCB's review/approval by November 1 ☐ Develop an HIE technical road map and sustainability model to be included in the HIE Plan and built upon every year thereafter ☐ Create an evaluation method for overseeing and measuring progress in implementation of HIE strategic plans and the effectiveness of the HIE Governance Model ☐ Evaluate statewide data governance efforts and design a data governance model appropriate for the State's HIE Steering Committee ☐ Work with stakeholders to assess potential changes in the State's Consent policy and support the production of a Consent Report per Act 187 of 2018
VT Legislature and GMCB	HIE State Policy: Consent and Connectivity	☐ Legislature: Pass Act 187 of 2018 to continue momentum in HIE activities and enhance oversight and accountability ☐ Legislature: Consider the Consent Report and potential adjustments to current statute and/or policies, if deemed necessary ☐ GMCB: Review VITL's budget and updated Connectivity Criteria and consider ways to enforce consent management and adherence to Connectivity Criteria through existing regulatory framework ☐ GMCB: Review and approve the annual HIE Strategic Plan
VHIE (VITL)	HIE State Policy: Consent and Connectivity	☐ Work with stakeholders to identify priority data sets to further develop the tiered Connectivity Criteria to drive improved data quality and patient matching in the VHIE; provide the Connectivity Criteria to the GMCB for approval annually (in 2018 Connectivity Criteria is included in the HIE Plan) ☐ Review policy allowing payers access to health data for administrative and operational uses ☐ Evaluate the organization's consent management processes to mitigate the technical and administrative burden of transmitting consent
DVHA	HIE Federal Policy	☐ Monitor changes to federal policy (e.g., H.R.6082- Overdose Prevention and Patient Safety Act; 21st Century Cures - TEFCA) and communicate impacts to the HIE Steering Committee to support informed planning
VT Legislature	Financing	☐ Extend HIT-Fund and approve the DVHA HIE program budget
HIE Steering Committee	Financing	☐ Review available funding sources, inventory needs and develop a sustainability model
DVHA	Financing	☐ Obtain federal HIE development funds ☐ Manage the State HIE budget (including the HIT Fund) in alignment with goals and initiatives outlined by the HIE Steering Committee and in accordance with State and federal law ☐ Contract for services in service of the strategic direction set forth by the HIE Steering Committee

Foundational Services, 2018-2019		
Accountable Party	**Area of Focus**	**Activity**
VHIE (VITL)	Consent Management	☐ Further automate the consent management process, increasing the number of records with consent documented to at least 42% in 2019 (35% in 2018)
VHIE (VITL)	Security	☐ Adhere to HIE NIST security standards ☐ Conduct an annual third-party security assessment and develop a mitigation plan, if necessary, to address items identified in assessment ☐ Partner with the Agency of Digital Services to manage security matters; hold a monthly meeting and adhere to industry reporting standards
DVHA	Security	☐ Work with the Agency of Digital Services to ensure that all HIE contracts include industry-driven security measures and real oversight protocols
VHIE (VITL)	Identity Management	☐ Reduce duplicate records in the VHIE by 60% (40% in 2018; 20% in 2019) ☐ Assess shared identity matching tools and report to HIE Steering Committee on results, and if deemed appropriate, procure and implement new identity matching tool(s) ☐ Ensure that existing patient matching services are effective and operational seven days a week and 24 hours a day with 94% average monthly uptime
Blueprint for Health – Clinical Registry	Identity Management	☐ Enhance the Vermont Clinical Registry's record matching capabilities to support the Women's Health Initiative, Hub & Spoke program, and Blueprint Practices
Agency of Digital Services (ADS)	Other	☐ Complete the information, technical, and business dimensions of the State's Architectural Assessment of the VHIE to support effective VHIE operational planning and the HIE Steering Committee's understanding of the VHIE

Exchange Services, 2018-2019		
Accountable Party	**Area of Focus**	**Activity**
VHIE (VITL)	Data Extraction & Aggregation	☐ Increase the number of health care organizations contributing to the VHIE that meet Tier II Connectivity Criteria standards ☐ Establish new or replacement interfaces (connections) feeding data from EHR systems to the VHIE ☐ Provide end users (OneCare Vermont, Blueprint for Health, Health Department, etc.) with data feeds to meet their unique data usage needs ☐ Enable use of EHRs by providing Meaningful Use and Security Risk Assessment consultation to providers participating in the Medicaid EHR incentive program
Vermont Care Partners	Data Extraction & Aggregation	☐ Collaborate with Designated Agencies in the procurement of EHR systems that support value-based payment and data sharing for mental health, SUD, and developmental disabilities. Data is to be aggregated in the Vermont Care Network data repository.
Blueprint for Health	Data Extraction & Aggregation	☐ Develop the Clinical Registry to manage sensitive SUD data aggregation and exchange in support of the Hub/Spoke program ☐ Explore data aggregation opportunities for statewide screening and referral programs
GMCB	Data Extraction & Aggregation	☐ Enhance VHCURES by upgrading to current standards, anticipating state data needs, and resolving analytical challenges present in the system
VHIE (VITL)	Data Quality	☐ Develop a data quality mitigation plan, as a component of the organization's strategic plan, in consultation with the HIE Steering Committee with a focus on improving quality and volume of specific data points related to health system goals ☐ Pilot the implementation of a terminology services tool (Health Language) and measure the impact on the quality of specific lab transmission across 25 health care organization; report to DVHA and the HIE Steering Committee on the achieved impact ☐ Execute a data quality initiative to increase the quality and volume of data points included in the Connectivity Criteria Tier II data set ☐ Work with partners such as the Blueprint for Health, Bi-State Primary Care Association and OneCare VT to implement source-directed data quality initiatives ☐ Modify the Connectivity Criteria in collaboration with the GMCB, the HIE Steering Committee, and other key stakeholders to further enhance the quality of data exchange through the VHIE
Blueprint for Health	Data Quality	☐ Continue to manage the Blueprint Sprint process to support data quality remediation at the source (health care organization) ☐ Partner with OneCare Vermont and Bi-State Primary Care Association to develop a statewide data quality remediation model
VHIE (VITL)	Data Access	☐ Evaluate data access preferences with end users and focus on development of the preferred data access method ☐ Implement single sign on to VITLAccess from EHR systems and/or cross community access (direct query and retrieve of some data within the VHIE) in accordance with the State's prioritized list ☐ Maintain and expand use of VITLAccess and the pharmacy benefit manager medication history query and view service based on user interest
VHIE (VITL)	Data Governance	☐ Begin development and implementation of a data governance model leveraging methods currently implemented by the GMCB and Agency of Human Services to align health data management practices across the State
VHIE (VITL)	Interoperability	☐ Explore methods for bi-directional data exchange with public health registries; provide the HIE Steering Committee with recommended strategies ☐ Maintain existing data feeds (Clinical Registry, Public Health Registries, OneCare VT, AHS' Care Management Solution, etc.), explore methods for enhanced data exchange
ADS	Interoperability	☐ Provide an HIE enterprise architecture recommendation to the HIE Steering Committee to support development of a technical roadmap

End-User Services*, 2018-2019		
Accountable Party	**Area of Focus**	**Activity**
One Care Vermont	Care Coordination & Analytics	☐ Leverage federal and state support to develop care coordination and analytics tools that support direct care, measurement and system improvement ☐ Utilize the data feed from the VHIE to support analysis of All Payer Model implementation
VHIE (VITL)	Notification Services	☐ Route data to Patient Ping and other event notification services used by VT providers
Blueprint for Health	Analytics	☐ Enhance the Clinical Registry to support data analytics needs related to Hub/Spoke, the Women's Health Initiative and other statewide initiatives ☐ Perform health program analysis based on claims data united with clinical data aggregated in the Clinical Registry
Bi-State Primary Care Association	Analytics	☐ Aggregate clinical and claims data in data visualization tool (Qlick Sense) and use to support a Model for Improvement effort with Federally Qualified Health Centers statewide ☐ Train stakeholders how to leverage analyzed health data for practice improvement
Dept. of Health	Analytics	☐ Procure a forecaster tool for the Immunization Registry to improve clinicians' ability to obtain real time and forecasted immunization data and support public health reporting.
Dept. of Health	Consumer Tools	☐ Maintain the public health reporting portals available to VT providers
VHIE (VITL)	Secure Messaging	☐ Provide the VITLDirect secure, point to point messaging service based on customer need and use

*As noted previously, the ultimate value to users is evident in Exchange and End-User services. However, tier one (Foundational) is required to enable tiers two and three (Exchange and End-User Services). While it may be ideal to have the foundation set before moving on to higher tiers, End-User Services have evolved in recent years out of necessity. However, the End-User Services that exist today will be enhanced as Foundational and Exchange Services become more effective over time.

HIE Sustainability

Building a Financing Model

As proposed, the HIE Steering Committee will be responsible for defining an HIE investment portfolio and monitoring statewide investments in service of achieving the goals laid out in this strategic plan. To do this, they must design an HIE network financing model (beginning in 2019), consistently evaluate the value of the financing model to ensure alignment with goals, and make adjustments to the model in a judicious and timely manner.

The Committee will develop the financing model through the lens of the following questions:

- *Will the State continue to invest in HIE?*
- *If yes, what criteria will be used to evaluate the viability of current and future investments?*
- *Based on statewide needs, what is the total level of investment required in the future?*
- *Considering the nature of future investment, what is the appropriate balance of public and private funds?*
- *How will investments capitalize on foundational services and opportunities for reuse?*

There are federal and state policies that make financing more challenging including, but not limited to, the following.

- HITECH (federal Health-IT) funds that support adoption of health-IT and development of HIE infrastructure must be drawn down and managed by Medicaid agencies and the funds must be primarily used to benefit Medicaid members.
- To leverage the significant investment dollars currently available through HITECH, states are required to provide state-sourced matching funding. The main source of this state funding in Vermont is the HIT-Fund, a tax on health care claims. The claims tax requires legislative intervention to prevent it from sunsetting annually.
- The federal investment funds that were directly targeted at establishing HIE institutions, like the VHIE, are no longer available.
- Value is intrinsically linked to a financial relationship. Public funds supported the development of the VHIE and offset costs of adopting EHR systems and connecting to the VHIE. Providers and other stakeholders have not been asked to invest in these areas, which has limited their financial relationship to outcomes.

> **Excerpt from the Challenges of Sustainability section of the 2017 Evaluation Report**
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> *"Based upon the interviews for this assessment, HIEs that receive a significant portion of their funding from subscription or usage fees self-identified as having close relationships with their stakeholder/customers to understand their needs. Likewise, they indicated that when providers "have skin in the game" by paying a fee to the HIEs, this closer collaboration results in lower use of public funds and the development of use cases directed at solving the specific needs of paying customers."*

To ensure focus on technology changes the Steering Committee will be responsible for receiving subject matter expertise from those within the industry helping educate and guide decision making. DVHA staff will support obtaining necessary expertise or request frequent technology updates from the VHIE.

Holding HIE Service Providers Accountable

The 2017 Health Information Technology Evaluation clearly articulated that public and private investments in HIE must be tied to defined outcomes and performance measures. The establishment of a unified HIE governing body (the HIE Steering Committee) that oversees the investment strategy coupled with well-crafted contracts between the State and HIE service providers, such as VITL, will go a long way toward addressing this need.

In overseeing the implementation of the statewide HIE Plan, it is incumbent upon the HIE Steering Committee to ensure there are appropriate instruments to hold accountable service providers that receive HIE investment funds, particularly public funds. This is particularly true in the case of VITL, considering the recent evaluations demonstrating performance challenges.

The HIE Steering Committee's goal is to focus the VHIE's work and enable the organization to demonstrate value to customers, garnering investment from private funding sources. The Steering Committee must work to identify the appropriate balance of public and private funds to ensure that basic HIE needs are met statewide.

Influences on Sustainability

Planning for HIE sustainability is centered on two fundamental principles:

1. The vision of HIE within Vermont, and nationwide, cannot be achieved without some public investment if HIE infrastructure is to be equitably available across the health delivery system; and
2. Government is not able to reliably fund all HIE endeavors because of constant demands for technical development, and therefore, private investment is also required.

Pertinent to public investment is the notion that the pursuit of effective exchange of health information is long-term, however, the nature of the HIT-Fund, the state's main HIE funding source, is that it expires every year. While the Vermont General Assembly may make a decision that solves the need for consistent, reliable funding for HIE, there remains uncertainty at the federal level. A significant portion of HIE investment in Vermont has come from the federal government. By the end of 2021, the federal HITECH funding source that has fueled much of the investment to date will no longer be available.

The Center for Medicare & Medicaid Services is working with states to ensure HIE progress does not come to a halt, but per federal guidance[33] states will have to consider: 1. How to best reuse existing assets or partner with other states to leverage resources; and, 2. How to fully align, and possibly integrate, HIE investments with Medicaid Enterprise Services.

Relative to private investment, consumers must see value to entice them to invest, and Foundational Services must be in place to fully enable customer-driven End-User Services. Vermont is currently working to solidify Foundational Services, while private entities like VITL work to build a private customer base. It is possible that public funds will become more limited before Foundational Services are fully in place.

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[33] Centers for Medicare & Medicaid Services. State Medicaid Directors Letters SMD# 16-003 (2016) and SMD# 18-005 (2018). Retrieved from https://www.medicaid.gov/federal-policy-Guidance.

Future HIE Planning

The HIE Steering Committee recognizes that technology is always changing. Whether it's an announcement that Silicon Valley is taking on the challenge of HIE, the EHR companies are collaborating on an exchange network, or the federal government is taking a new look at drivers of interoperability, the only constant is change. The HIE Steering Committee's most crucial role going forward will be to develop a consistently reliable governance and financing model that can adapt to, and thrive in, a constantly evolving landscape.

In 2019, the HIE Steering Committee will produce a technical roadmap that will illustrate a path forward for exchange across the HIE network. Like this plan, the roadmap will focus on sustainability. It will explore the Foundational and Exchange Services that all end-users rely on creating a basis for shared understanding of operations. Some of the key questions that need to be addressed in the design of this roadmap include:

- *Will the VHIE provide direct access to its records for consumers and providers, or, provide the data so that dedicated portal applications, cost-free or commercial, can provide this service?*
- *Should the network rely on EHR vendors to improve the ease of direct, one-off integration, as is the case today, or anticipate development of a neutral platform that can extract and transform data as needed?*
- *Should the VHIE aggregate and manage data, act as a pass-through access point to aggregation applications, or be designed to support both options?*
- *Can one solution eliminate the need for independent statewide identity management solutions?*
- *What is the role of clinical registries and other data aggregators, like VHCURES, as it relates to the VHIE?*
- *How does technology support statewide priority areas such as the opioid crisis?*
- *Where are the greatest gaps between technological capabilities and user needs?*

Each of these questions needs to be reviewed considering stakeholder needs, where the value provided by the network begins, where network services support value provided by end user applications, and the current state of maturity.

One of the innovations that requires consideration in the near-term is blockchain. Vermont has taken strong steps to become a leader in this technology. This summer, Vermont legalized "blockchain-based limited liability companies" to encourage local growth based on this technology. South Burlington is a blockchain pioneer, becoming the first municipality in the country to record property titles using the technology[34]. Health information management and identity management are prime targets for blockchain development and the HIE Technical Roadmap must consider in what manner and at what time it becomes relevant to the health care system.

Other developments in the technical landscape include the release of the Federal Trusted Exchange Framework and Common Agreement (TEFCA) framework[35] and the impact it may have on the CommonWell and Carequality networks which have a goal of nationwide information sharing. The

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[34] Landen, X. (2018, August 28). Vermont bullish on blockchain as new law takes effect. *VTDigger*. Retrieved from https://vtdigger.org.

[35] Office of the National Coordinator for Health Information Technology. (2018). *Draft Trusted Exchange Framework*. Retrieved from https://www.healthit.gov/topic/interoperability.

Technical Roadmap for the future of HIE in Vermont must evaluate and consider if and whether to leverage these efforts.

Additionally, the surge in interest and adoption of telemedicine with findings of concurrent cost savings and improved outcomes requires that telemedicine platforms for service delivery and documentation be part of the care provision and information landscape in Vermont.[36]

Each year, the HIE Plan will be updated by DVHA in partnership with the HIE Steering Committee. At a minimum, DVHA will fulfill statutory requirements and ensure that the plan be revised annually and updated comprehensively every five years.[37]

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[36] Siwicki, B. (2018, August 31). Telemedicine racks up $1 million in cost avoidance savings for Tallahassee Memorial. *HealthcareITNews.* Retrieved from https://www.healthcareitnews.com/news.
[37] Act 187. *An act relating to health information technology and health information exchange*. (2018).

APPENDIX A: 2018 HIE Steering Committee Charter

VERMONT
AGENCY OF HUMAN SERVICES

Health Information Exchange

Steering Committee Charter

Version <1.5>

HIE Defined
Health Information Exchange (HIE) is used as both a verb and a noun.

The use of HIE as a verb (an action, state or occurrence) refers to the exchange of healthcare related data among facilities, health information organizations, and government agencies according to national standards. HIE is often used as shorthand for programs, tools, and investments that help aggregate and exchange claims and clinical data to improve healthcare.

When HIE is used as a noun (a thing) it refers to a Health Information Exchange, an organization that works to collect and sort data from individual electronic health records. This data is often electronically transmitted and/or made available through the Health Information Exchange so that providers can access patient data from different clinical interactions all in one place. There is at least one HIE in almost every state in the nation, and HIEs can offer a variety of services related to the exchange of clinical data.

HIE is widely thought to have the potential to allow healthcare providers, payers, and policymakers to measure and understand the impact and efficacy of clinical choices and healthcare reform efforts.

Purpose of the HIE Steering Committee
The purpose of the HIE Steering Committee is to help the Agency of Human Services (a) understand the role of the State in facilitating access to tools and data to the healthcare community to enhance/improve the health of all Vermonters, (b) create a plan that reflects this role, (c) oversee the timely execution of that plan, and (d) evaluate the plan's effectiveness.

The Steering Committee's Vision
To enable health information exchange that promotes quality healthcare in Vermont.

The Steering Committee's Mission
To work across organizations and disciplines to create and endorse a shared view of the definition, purpose, and goals of HIE in Vermont.

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 2017/2018, the HIE Steering Committee will:

- Develop an understanding of what HIE activities have been conducted in the past, successes and failures in Vermont's HIE system, national standards of success, how federal and state HIE investments can be used, and the general funding and planning processes established through state and federal law.

- Create and execute a stakeholder engagement plan aimed at cataloging stakeholders HIE needs. This includes utilizing existing groups that unite stakeholders on like issues, and leverage existing research and work done in the field.
- Develop a short-term (1 year) and long-term (3-5 year) HIE Plan that acts on the recommendations provided in the HIE evaluation report. The HIE Plan will focus on leveraging available funding, whether public or private, allowing for establishment of HIE core functions and ensure sustainability. The plan will also define roles for all involved in planning, overseeing, and/or executing HIE activities.
- Support the development of a technology roadmap that will aid the execution of the HIE plan.
- Present the HIE Plan to key leaders at the Agency of Human Services, the Green Mountain Care Board and legislative stakeholders for review and approval.
- Oversee the execution of the HIE Plan. The Steering Committee must create trust and ensure that entities that are involved with HIE activities are accountable for their roles and responsibilities, and that a primary goal of these activities is to improve secure access to healthcare data that is of high quality which can be used to improve health outcomes while keeping costs down.
- Continue to mature and formalize HIE governance for the state of Vermont to reinforce continued, sustainable planning efforts.

Steering Committee Membership

The members of the committee were selected by the Chair to best enable HIE progress in Vermont. Membership is comprised of 7 voting members and 3 non-voting members. DVHA's HIE Team will act as the Steering Committee's staff.

Name	Role	Reason for Selection	Voting Member
Michael Costa	Chair	Agency designated program sponsor for HIE/HIT	Voting
Leah Fullem	ACO Lead	Vermont's health care reform goals rely heavily on ACOs	Voting
Kelly Lange	Insurance Lead	Investments should be aligned across payers.	Voting
Simone Rueschemeyer	Community Provider Lead	Representative of mental health, developmental disabilities and substance use services and associated data exchange.	Voting
Craig Jones	National & State HIE Perspective	National thinker on HIT/HIE with VT delivery system experience.	Voting
Andrew Laing	Technologist	Information systems SME; ADS Representative	Voting
Tracy Dolan	Public Health Lead	Public Health data exchange is essential to successful HIE, and it is a focus of federal incentive programs	Voting
Kristina Choquette	VITL Lead	VHIE Representative	Non-Voting
Beth Tanzman	Practice Innovation Lead	Blueprint for Health is considered a key stakeholder in practice level health care reform.	Non-Voting
Emily Richards	HIE Program Lead	DVHA's HIE Program Director overseeing HIE contracts, federal plans and funding requests, and the HIE Team.	Non-Voting

Meetings

Standing committee meetings will take place monthly. The expectations for the meeting are that (a) people participate in person, (b) they have done any applicable work beforehand, and (c) do not use devices during the meeting. Locations of the meetings will be determined by the Steering Committee.

Decision Making

Agendas will be circulated no later than 3 days prior to the meeting and identified as either for information, discussion, or decision. 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.
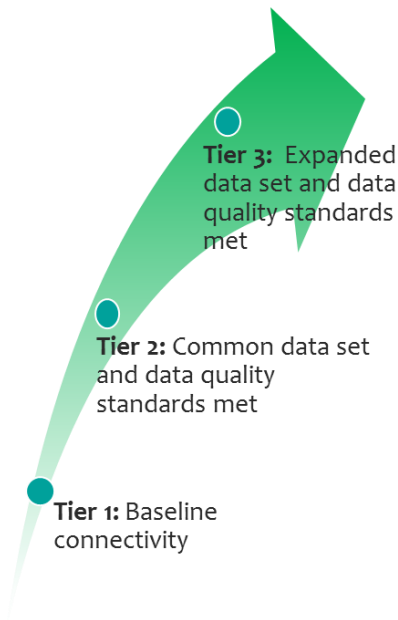
Communication Plan

Meeting agenda, minutes and resource materials will be transmitted via email directly from DVHA's HIE Unit to the Steering Committee members. Meetings will be scheduled using Microsoft Outlook.

APPENDIX B: Proposed 2019 Connectivity Criteria

Connectivity Criteria

Uses expand as hospitals and practices advance through the stages

Tier 3: Expanded data set and data quality standards met

Tier 2: Common data set and data quality standards met

Tier 1: Baseline connectivity

Criteria	Objective	Value
• Expanded data sets for use by specific stakeholder(s) • Data is standardized	• Variety of quality data aggregated for specific use by stakeholders • Data can be analyzed across organizations	• Performance measurement and population health management applications are optimized • Expanded ata uses possible for advanced end-user services
• One common data set for use by VHIE and all stakeholder(s) • Data is standardized	• Uniform, quality patient data aggregated • Data utility beyond point of care	• Stakeholders can measure quality and manage populations (inform quality measures) • Expanded data uses possible (example: Care Management)
• Data supports patient matching • Data is structured for storage and transmission	• Implement planned interfaces • Patient matching • Data use at the point of care and by stakeholders	• Clinicians can view basic data • Clinicians can receive electronic results • Patients are properly matched

Tier 1 – 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
1 – Baseline Connectivity	Health care organizations (HCO) contributing patient data for use at the point of care. HCOs contributing data as required by health reform delivery and payment programs (ACO, Blueprint for Health, MU, Vermont Dept of Health, other programs)	Green Mountain Care Board (GMCB), ACO, Blueprint for Health, Vermont Dept for Health, VCCI, etc.	Engage with VITL to meet the Baseline Connectivity Criteria; establish connectivity to the VHIE; build interfaces from the Health care organization's EHR to the VHIE	Identify priority HCOs and their locations needing to contribute data. Communicate to the prioritized HCOs 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 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 or 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 (Care Navigator, PatientPing)	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.	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

Tier 2 – Common Clinical Data Set and Data Quality Connectivity Criteria

Tier	Customers	Stakeholders	Customer Responsibilities	Stakeholder Responsibilities	VHIE Responsibilities	Objective and Characteristics	Value in Connecting to the VHIE	Data Criteria	Security	Outcome
2 – Common Clinical Data Set and Data Quality Standards	Participating HCOs in ACO, VCCI, Blueprint for Health, Bi-State, other programs	Population Health Management and Quality care programs (Accountable Care Organization (ACOs); Blueprint for Health; Vermont Department of Health; other) Care management programs being supported (VCCI, OneCare, others). Policy makers, clinicians and HCO administrators reliant on data reports from the Accountable Care Organization (ACOs); Blueprint for Health; Vermont Department of Health; other. Green Mountain Care Board (GMCB)	Capture data in discrete data fields in EHR. Hold EHR vendors accountable for sharing data for program(s) in which the HCO participates Complete the Data Set and Data Quality Standards Worksheet containing the common data set requirements for the program(s) in which the HCO participates	Establish common clinical data set. Identify HCOs needing assistance in meeting Clinical Quality measures for their program. Partner with VITL and the HCO in data quality engagements or Blueprint Sprints to improve data quality during and/or post-interface implementation.	Assess the ability of HCOs to document minimum data sets and their EHR's capability to send that data using the Data Set and Data Quality Standards Worksheet. Facilitate the effort with HCOs to improve data quality at the documentation level or the EHR 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 data sets are complete, accurate. Clinical data is standardized and therefore interoperable Expanded applications such as care management and clinical data use can be supported to meet customer specified usage. Performance measurement and population health management applications are enabled.	Same as Tier 1 with the addition of: Supports Care management 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 FOHC, Blueprint for Health, etc.) Robust data analysis and reporting to measure performance (Blueprint for Health practice profiles, ACO OneClick, etc.)	Participates in and complies with programs that have specific data quality requirements. Meet the common clinical data set requirements in the Clinical 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 Stage 1	Increased data quality enables usage and confidence in information for quality performance measurement and population management reporting.

Tier 3 – Expanded Clinical Data Set and Data Quality Connectivity Criteria

Tier	Customers	Stakeholders	Customer Responsibilities	Stakeholder Responsibilities	VHIE Responsibilities	Objective and Characteristics	Value in Connecting to the VHIE	Data Criteria	Security	Outcome
3 – Clinical Data Set and Data Quality	Participating HCOs in ACO, VCCI, Blueprint for Health, Bi-State, other programs	Population Health Management and Quality care programs (Accountable Care Organization (ACOs); Blueprint for Health; Vermont Department of Health; other) Care management programs being supported (VCCI, OneCare, others). Policy makers, clinicians and HCO administrators reliant on data reports from the Accountable Care Organization (ACOs); Blueprint for Health; Vermont Department of Health; other. Green Mountain Care Board (GMCB)	Capture data in discrete data fields in EHR. Hold EHR 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 for the program(s) in which the HCO participates	Establish expanded clinical 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 in data quality engagements or Blueprint Sprints to continuously improve data quality	Assess the ability of HCOs to document full data sets and their EHR's capability to send that data using the Data Set and Data Quality Standards Worksheet. Facilitate the effort with HCOs to improve data quality at the documentation level or the EHR technical level to meet stakeholder's and customer's data requirements. Identify data delivery and standardization opportunities Resolve data delivery and standardization opportunities	Clinical data sets are complete, accurate, standardized, and interoperable Performance measurement and population health management applications are optimized.	Same as Tiers 1 and 2 with the addition of: Data can be used for advanced end user tools and services (Care Management tools, custom data marts for customer use Advanced reporting driven by clinical data (Comparative data sets, etc.)	Meet the clinical data set requirements in the Clinical Data Set and Data Quality Standards Worksheet Scope of data collected supports performance measures and interoperability supports population health management. Include the Connectivity Criteria tier achievement in HIT-related Certificate of Need requests to the GMCB	Same as Stage 1 with signed VHIE Services Agreement Addendum by data contributors on file to share deidentified data	Increased data quality enables usage and confidence in information to optimize quality performance measurement and population management reporting. HIE is able to make the data available to researchers and policymakers for analysis and reporting.

APPENDIX C: 2018 HIE Plan Stakeholder Engagement

The 2017-2018 HIE Steering Committee consisted of a small group of dedicated stakeholders who committed to developing a state-wide strategic HIE Plan to focus governance and planning efforts following the release of the 2017 Evaluation Report. At the group's inception, members recognized that stakeholders outside of the Steering Committee would need to be engaged in the planning process to ensure that the range of HIE needs in the health delivery system were appropriately represented. As discussed in the HIE Plan, the Steering Committee began this engagement by gathering use cases to illustrate the needs of health system stakeholders. A few months after the Committee's work began, with the results of their work ready to socialize and gain feedback on, the Committee planned the "HIE Plan Roadshow."

The goals of the Roadshow were to:
1. Share current and future HIE work with the stakeholder community;
2. Build awareness of how health information exchange matters will be governed beginning in 2019; and
3. Collect feedback on the 2019 plan and inform future planning efforts.

In September and October of 2018, DVHA, on behalf of the HIE Steering Committee, met with the following groups to fulfill the goals of the Roadshow.
- Bi-State Primary Care Association
- Vermont Medical Society
- GMCB Primary Care Advisory Group
- Medicaid and Exchange Advisory Group
- VITL Board
- AHS Leadership
- VDH Staff Involved in HIE Efforts
- GMCB Representatives and Staff

Each group engaged in the Roadshow shared unique perspectives, which were reviewed and considered by the HIE Steering Committee. The Committee discussed the feedback that would be most relevant to this version of the Plan and the feedback that was most appropriate for consideration by the permanent HIE Steering Committee.

The following is a list of feedback that was heard in multiple Roadshow engagements. This list is by no means comprehensive; it is intended to offer examples.
- Goals must be direct to be clear (e.g., Remove "the efficiency" in Improve the Efficiency of Health Care Operations).
- Providers want to see patient care and reductions in administrative burden at the center of strategic planning efforts. Provider's concerns revolved around the utility of EHR systems and interoperability.
- The concept of relying upon use cases is meaningful; some asked for use cases to be included in the Plan.
- The Governance Model was well received though there were questions about the difference between the Steering Committee and VITL/VITL's Board.

- Some expressed interest in changing the consent to share health data policy and/or confusion about the current consent policy.