Report to
The Vermont Legislature

Improving Interoperability of Electronic Health Record Systems

In Accordance with Sec. 8 of Act 187 of 2018:
An act relating to health information technology and health information exchange

Submitted to: House Committees on Health Care and on Energy and Technology and the Senate Committee on Health and Welfare

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AGENCY OF HUMAN SERVICES
Department of Vermont Health Access

Improving Interoperability of Electronic Health Record Systems

PREPARED BY THE DEPARTMENT OF VERMONT HEALTH ACCESS, WITH INPUT FROM VITL AND OTHER STRATEGIC PARTNERS

DELIVERED: JANUARY 15, 2019

Background

Sec. 8 of Vermont Act 187 of 2018 calls for, a report on Improving Interoperability of Electronic Health Record Systems. Specifically, the legislation states, "*The Department of Vermont Health Access, in consultation with Vermont Information Technology Leaders, Inc. and other interested stakeholders, shall provide recommendations to the House Committees on Health Care and on Energy and Technology and the Senate Committee on Health and Welfare on or before January 15, 2019 regarding ways to improve the utility and interoperability of electronic health records and health information exchange in Vermont*."

In late 2017, DVHA convened a Health Information Exchange (HIE) Steering Committee, consisting of a small group of dedicated stakeholders committed to developing a strategic plan to re-focus the State's HIE work. Per 18 V.S.A. § 9351, the strategic plan was delivered to the GMCB on November 1, 2018. The Plan was subsequently approved by the GMCB and is posted here: https://gmcboard.vermont.gov/hit/plan.

The HIE Plan defines statewide goals and the HIE Ecosystem, or the environment required for HIE to function effectively. The environment includes the following essential component parts: financing, policy/process, governance, and technology. Technology is further delineated into a three-tiered service model – see Figure 1 below. Foundational Services (Tier I) are required to enable Exchange and End-User Services (Tiers II and III), and the ultimate value to users is in in the second and third tiers.

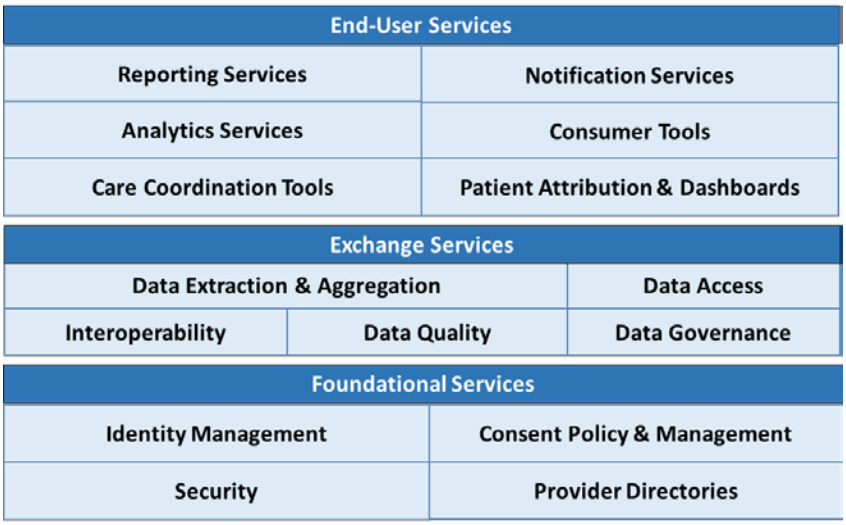

Figure 1: HIE Conceptual IT Services Model

Interoperability is included in the tiered HIE services model as an Exchange Service, or within Tier II. In this context, *Interoperability* refers to systems that can share data using basic protocols. Systems include, but are not limited to, Electronic Health Record (EHR) systems which contain individual's clinical data from unique care settings. Other systems that may support exchange and aggregation of a longitudinal health record may include clinical registries (e.g., Vermont's Immunization Registry), claims databases (e.g., VHCURES), and health information exchanges.

On the next page, there is an excerpt from the 2018-2019 HIE Plan, Exchange: Interoperability section.

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, 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".[1]

[1]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.

2018-2019 Tactical Plans

To enable an environment where effective interoperability of electronic health record systems may occur, the Key Challenges identified in the HIE Plan must be addressed, and the technical foundation, or Tier I of the HIE Services Model, must be in place. While many of the Key Challenges require a national approach, the State has some control over ensuring the foundation of Vermont's HIE Services Model. To that end, in the 2018-2019 HIE Plan, the State and its partners on the HIE Steering Committee, committed to making the following progress during the term of the plan.

- Establishing the permanent governance model for the HIE
- Achieving 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

The tactics listed above are aimed at securing Tier I services, which will enable services in Tier II and III, such as interoperability. The full Tactical Plan is included in the HIE Plan (see link to Plan on page 2).

Additionally, the State and its partners are already working on the following initiatives that promote sharing of clinical data across systems, in a standardized manner. DVHA recommends that the legislature continues to support legislation that enables these initiatives, such as continuation of the HIT Fund, which provides needed State matching funds to take advantage of federal funds available to drive interoperability at the state level.

1. ***Leveraging the VHIE to support exchange across EHRs*** – the State has invested in Vermont's Health Information Exchange (VHIE) for several years. Generally, Health Information Exchanges exist to aggregate data from disparate EHR systems to allow clinical data to be shared across a network, and in the case of Vermont, the network includes statewide facilities and facilities in neighboring states that tend to treat VT patients (e.g., NH and NY). While HIEs do not fundamentally change the functionality of EHR systems, the operator of Vermont's HIE does have some leverage in influencing what is demanded of EHR vendors. At this time, HIEs are used nationwide to address incompatibility of EHR systems and allow providers and health programs to access health data from disparate sources in real time. The Department of Vermont Health Access contracts with VITL for Vermont's HIE services. This year's contract is focused on expanding and maintaining connectivity, enhancing the quality of data, improving record matching, and increasing the number of records accessible (with consent preference noted).

2. ***Enhancing VHIE Connectivity Criteria*** – Under 18 V.S.A. § 9352(i)(2), Vermont Information Technology Leaders (VITL) must "establish criteria for creating or maintaining connectivity to the State's health information exchange network". This year, the Connectivity Criteria was enhanced to improve standardization of data exchange across the HIE system. Standardization is key to simplifying exchange of data across different health record systems or achieving interoperability. The Connectivity Criteria ensures that the quality of the data is available for exchange and can incorporate interoperability standards as they develop or change. The Connectivity Criteria builds on national exchange standards and is designed to be agile in incorporating new standards as they evolve. Future iterations of the Connectivity Criteria could include a preferred vendor list to aid in

the selection of EHR systems that best serve clients while supporting network-wide interoperability goals.

3. ***Promoting Interoperability Program (Meaningful Use)*** – A federal program, operated by Vermont staff, offers financial incentives for "Meaningful Use" of EHR technology. This program has been accompanied by certification of EHR systems as well as some data sharing standardization. As noted, use of standard protocols is key to interoperability of systems. Also, simply using EHR technology can promote better patient-provider communication and thus higher patient satisfaction scores, both of which are proven to reduce the likelihood of rehospitalization by 39 percent.[1]

National Level - Interoperability Roadmap & Shifts in the Marketplace

In 2004, then President George W. Bush established the Office of the National Coordinator (ONC), as the principal federal entity charged with coordination of nationwide efforts to implement and use the most advanced health-IT and exchange systems and announced a 10-year goal of assuring that most Americans had electronic health records. Since that time, the Center for Medicaid and Medicare Services (CMS) has implemented an incentive program (Promoting Interoperability Program) to offset the costs of EHR systems for many health care providers. In 2016, CMS also expanded the ways in which funding under the HITECH Act could be used by States to further the use of EHRs and exchange of clinical data.

In 2016, Congress signed the 21st Century Cures Act, which in part, requires the Office of the National Coordinator (ONC) and the US Department of Health and Human Services to improve interoperability of health information. The Act requires that the ONC develop a "Trusted Exchange Framework and Common Agreement" (TEFCA) to improve data sharing across disparate health networks and develop strategies to reduce administrative and reporting burdens among clinicians. The ONC announced that they would release the TEFCA by the end of 2018, but it has yet to be released.

Also, in 2016, two major organizations representing EHR vendors and the HIE community announced that they planned to work together to advance connectivity and health information exchange. In 2018, the two organizations, Carequality (an organization engaging stakeholders around an interoperability framework) and CommonWell (an "alliance" for interoperability), developed the technology to allow their networks to query one another, thus developing the ability for most major EHR vendors nationwide to connect their clients' records.[2] The VHIE's current HIE vendor platform is a member of Carequality and VITL is a member of CommonWell. At the time of the submission of this report, the impacts of this progress are still unknown, and particularly unclear in Vermont.

In conclusion, both the public sector and the private sector are driving toward establishment of a self-sustaining EHR industry that supports interoperability. However, the challenge of interoperability has yet to be solved, and it is still unclear what the role of states and their partners are in the new, nationwide interoperability efforts. DVHA understands that no matter what innovations occur, reliable policy, process, and governance will be needed. Therefore, DVHA is focused on ensuring that the HIE Steering Committee can support the State's interoperability goals by consistently updating and

[1] https://patientengagementhit.com/news/good-patient-satisfaction-communication-tied-to-low-readmissions
[2]https://www.healthcareitnews.com/news/ehr-interoperability-were-closing-signature-moment and https://www.commonwellalliance.org/news/commonwell-health-alliance-announces-general-availability-carequality-connection/

executing a strategic plan that allows for adaptability to market changes, and clearly defines agile, short-term incremental progress.

Recommendations

- **Support the HIE Steering Committee**. Act 187 of 2018 amended 18 V.S.A. § 9351 to involve the HIE Steering Committee, in partnership with DVHA, in the development of an annual HIE strategic plan. This plan is essential to ensuring that the State is making HIE investments that are guided by both the needs of Vermont's patients, and the evolution in the HIE landscape nationwide (e.g., TEFCA). The HIE Steering Committee is positioned to research the viability of different HIE options, such as shared EHR technologies, and engage the health care community in a dialogue about the best strategies to serve the most timely and broadest-reaching needs. In 2018, the Steering Committee engaged several stakeholder groups, including the GMCB Primary Care Advisory Group. The HIE Plan dictates that this type of stakeholder engagement will continue in 2019-2020.

- **Extend the HIT Fund**. Established by 32 V.S.A. § 10301, the HIT Fund supports electronic health systems, the health information exchange network (operated by VITL), and the Blueprint for Health and like initiatives in their use of information technology. As legislated, the tax revenue that supports the Fund sunsets annually. Act 187 of 2018 moved the previous year's tax sunset to July 1, 2019. The HIT Fund is used to leverage federal funding under the HITECH Act used to support the aggregation and exchange of clinical data. Without the HIT fund, the State's ability to leverage short-term federal HIE funding to pursue interoperability of data systems is significantly diminished.

- **Enforce the State's HIE Connectivity Criteria**. Interoperability can only occur if there are basic data sharing protocols in place. At this time, Vermont's HIE Connectivity Criteria, annually updated by VITL and submitted to the GMCB for approval, is the State's mechanism for regulating data sharing protocols as they relate to using Vermont's HIE to share data collected in EHRs across the health system. The GMCB has committed to using the Connectivity Criteria as a component of the hospital budget regulatory process. As added enforcement, the General Assembly may consider enforcing the principles of the Connectivity Criteria in pertinent legislation.