VITL

2017 *Annual Report*

Vermont's Evolving Health Information Exchange

www.vitl.net

Contents

Executive Summary

Vermont Information Technology Leaders, Inc. (VITL)—operator of the Vermont Health Information Exchange (VHIE)—presents this 2017 annual report, which meets our obligations under 18 V.S.A. §9352(e). The report looks back on VITL's activities during 2017, while looking ahead at the significant work that must be accomplished to fulfill the promise of the VHIE.

On November 15, 2017 a report commissioned by the State of Vermont pursuant to Act 73 was issued. The report recognized health information exchange challenges nationwide, identified areas for improvement for VITL and the State of Vermont, and made many recommendations to strengthen our work for the benefit of Vermonters. We are heartened that the report recognizes the value of health information exchange in health care reform, and recommends that Vermont continue to champion the use of this technology to achieve higher quality patient care.

The health care industry continues to transition from a fee-for-service payment structure to value-based payment models. As health care providers make the transition, access to clinical data for chronic disease management and population health analysis becomes increasingly necessary. The VHIE will continue to be an important source of the protected, high quality data providers need today and into the future.

The year ended with the retirement of VITL's chief executive officer, John K. Evans. John led the establishment of VITL in 2005, was the first board chair and served as president/CEO for the past five years. John has given his time and energy passionately to the mission of VITL, and is credited with advancing the health information exchange in Vermont. However, he decided that the time was right to retire so VITL can tackle its next challenges of partnering with the State and other stakeholders, to increase the impact of its technology and tools in support of better health care at lower overall costs for Vermonters.

Below are some of the highlights of VITL's work during 2017:

- Expanded the VHIE by surpassing 1,070 interfaces, resulting in the capture of approximately 64 percent of available clinical data on Vermonters.
- Established a connection to the Veterans Affairs Virtual Lifetime Electronic Record (VLER) system, covering some 48,000 Vermont veterans.
- Provided access to information regarding care delivered to patients at home, by completing 31 connections between the VHIE and 18 home health care locations of nine parent organizations.
- Improved access to medical information for inmates by creating VHIE connections between The University of Vermont Medical Center, Northwestern Medical Center and Springfield Medical Care Systems, and the electronic health record (EHR) systems at seven Vermont correctional facilities.
- Supported coordination of care by connecting the telemonitoring systems of Central VT Home Health & Hospice and The VNA of Chittenden and Grand Isle Counties to their EHR systems, and to the VHIE.
- Delivered data for performance measures to Vermont's accountable care organizations, the Blueprint for Health and other health reform initiatives.

VITL has partnered with the State since the establishment of the VHIE, and we look forward to working with the State, the legislature and VITL's many stakeholders to help implement the Act 73 report recommendations during 2018.

John K. Evans MHA, FACHE
Former VITL President and CEO

Kristina Choquette
Acting VITL President and CEO

Bruce Bullock, MD
Chair, VITL Board of Directors

Board of Directors

- Board of directors elected at the September 2017 annual meeting -
**Governor's appointee seat vacant during 2017*


Mike Del Trecco
VAHHS


Don George
BCBS of VT


Joel Benware
NMC


Amy Putnam
NMC


John K. Evans
VITL President & CEO


Jessa Barnard Esq.
VT Medical Society


Adam Buckley MD
UVM Health Network


Bruce Bullock MD, PC
Marble Valley


Rep. Lori Houghton
Chittenden 8-2


Richard Slusky
Consumer Rep.


Todd Moore
OneCare Vermont


Richard Elmore
Allscripts


Jerry Ford
Marathon Health, Inc.

Standing Committees

Executive/Governance
- Bruce Bullock MD, Chair
- Vice Chair - vacant
- Mike Del Trecco, Treasurer
- Secretary - vacant
- John K. Evans

Technology
- Joel Benware, Chair
- Richard Elmore
- Jerry Ford
- John K. Evans

Finance
- Mike Del Trecco, Chair
- Amy Putnam
- Bruce Bullock MD
- Richard Slusky
- John K. Evans

Provider Advisory
- Diana Barnard MD
- Rick Barnett PsyD
- Mark Burke MD, FACC
- Rebecca Jones MD
- Kate McIntosh MD
- Andrea Regan MD
- Martha Stitelman MD
- Deborah Wachtel DNP, MPH, APRN
- Norman Ward MD

Health Information Exchange: Patient Impacts

Since the inception of Vermont's Health Information Exchange (VHIE), the benefits for both providers and their patients are being realized every day. VITL recognizes the need to work in partnership with stakeholders and the State of Vermont to connect more providers to the VHIE, so that health information exchange will continue to improve coordination of care, enhance patient safety and reduce health care costs.

VITLAccess—the "portal into the VHIE" that was developed by VITL—is now accessed by over 2800 authorized users statewide to view the most current, shared clinical data about their patients. The data is sent continuously to the VHIE by over 260 contributing health care organizations.

During 2017, VITL solved a problem for two Vermont home health organizations that wanted better access to patient telemonitoring data, and to improve care coordination with providers. The first phase connected the organizations' electronic health record (EHR) systems to feeds for in-home telemonitoring devices that collect vital signs from patients with complex medical conditions.

Connections were then built from the home health EHRs to the VHIE. Having the telemonitoring data available electronically and in real time now gives home visiting staff and the patients' other providers access to important data when and where they need it, to better inform care.

Patient Consent

Successful health information exchange in Vermont depends in part upon the consent or "opt-in" a patient must give, so that clinical data collected in the VHIE can be shared with the patient's treating providers. Collection of written consent is the responsibility of Vermont providers, but managing the paperwork and manual entry of the consent status for each patient is an administrative burden. This method is also a barrier to the statewide promotion and acceptance of consenting to share patient information.

VITL partnered with the University of Vermont Medical Center and Northeastern Vermont Regional Hospital to pilot projects in 2017 that automated the consent management within the hospitals' EHRs.

During the registration process, hospital staff collect patient consent as part of the normal intake process. Along with any other demographic changes (such as change of address) the staff notes a patient's decision about consent within the EHR. When registration closes the patient record, a consent "indicator" message is sent to the VHIE for other providers to see.

As a result of the consent automation project, the number of Vermonters who have opted-in, allowing their clinical data to be shared with treating providers, increased from 19 to 25 percent.

Patient Impact Cases

To demonstrate the promise that robust VHIE utilization has for improving care, five cases are presented here from providers who used VHIE data to assist in treating patients (names and locations have not been included to protect patient privacy). Future collaboration with providers and stakeholders will present opportunities to improve the VHIE's ease of use in supporting high quality patient care, as highlighted in the State's Act 73 report.

Preventing a Misdiagnosis

A provider received a colonoscopy report that diagnosed a patient with a specific kind of cancer. After accessing the pathology report via VITLAccess, the provider determined that the patient had another form of cancer which is treated in a very different manner. Timely access to this information proved to be crucial in providing the proper treatment and care for this patient, as well as saving the emotional stress and financial costs of an incorrect treatment.

Reducing Overprescribed Opiates

A patient visited a provider claiming a rib injury from a fall. He had specific requests on what pain medication he wanted, but after reviewing his medical records in VITLAccess, the provider discovered that the patient had visited almost every emergency room in Vermont with a similar story, obtaining narcotics on most visits. The provider did not prescribe narcotics in this case, because it was apparent that there was drug seeking behavior.

A Child Without a Medical History

A seven-year-old foster child visited a provider as a new patient, but there was no medical history available about his asthma and heart conditions. After checking in VITLAccess, the provider discovered that the foster mother had not been told about an essential diuretic medication that the child needed to take. The provider wrote a prescription for the foster mother, thus preventing the child from possibly going into heart failure and ending up in the hospital.

Identifying Abuse and Neglect

The family of a six-year-old child who was developmentally delayed claimed that they were giving the life-saving thyroid medication he needed, but when the treating provider checked the prescription fill history in VITLAccess, it showed that the parents had not filled the medication for over a year.

The Vermont Department of Children and Families removed the child from the home, and the foster family began to give the thyroid medication to the child so that the he would have more normal neurological development. The family doctor was now able to follow the medication fill history with VITLAccess, to assure that the foster family was following through.

Coordination of Long-Term Care

A female patient at The University of Vermont Medical Center was discharged after a complicated hospital stay with heart and kidney complications. The patient was trained to do self-monitoring of her blood pressure, pulse, oxygen level and weight at home, and her telemonitoring information was sent electronically to the VNA and then to the VHIE. [VITL partnered with the VNA of Chittenden and Grand Isle Counties during 2017 to create connections that could import telemonitoring data into the VHIE].

The patient's primary care nurse practioner was able to adjust her medications when needed to prevent heart failure and repeated hospitalization, by viewing the patient's telemonitoring data in VITLAccess.

Improving Provider Access to Clinical Data

Use of the VHIE is expanding, and as VITL continues to partner with clients, stakeholders and the State to increase provider participation, currently available patient clinical data is being captured from:

- all Vermont hospitals and Dartmouth-Hitchcock Medical Center.
- ten Federally Qualified Health Centers.
- 168 other primary and specialty care offices.
- nine Visiting Nurse Associations and one independent home health agency.
- three commercial laboratories.

The VHIE and the Health Data Management infrastructure (HDM) play important roles in health care by providing platforms for the collection, aggregation and access of clinical data, and support for population health analytics.

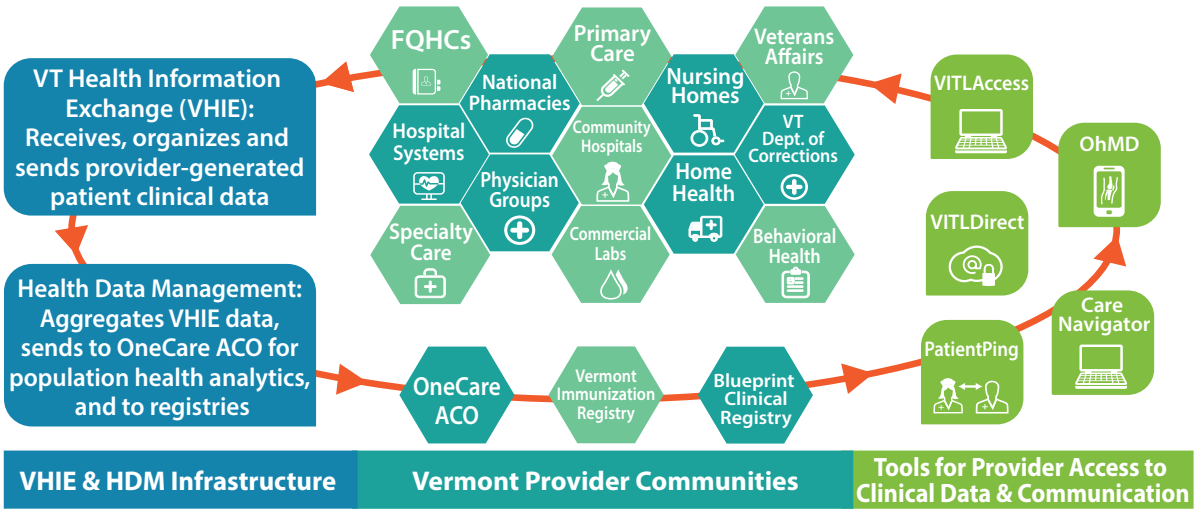
VITL pursues the highest level of security for the VHIE and protection against cyberattacks. As a fully HIPAA compliant organization, VITL is in the process of reaching a higher standard defined by the National Institutes of Standards and Technology (NIST). VITL is also reviewing the Act 73 report for other recommended security measures.

Data Collection and Aggregation

Clinical data is collected through interfaces between health care organizations and the VHIE. Interfaces are secure, programmed software connections between the VHIE and an electronic health record system, registry or other provider source, in order to send and/or receive specific types of data. These secure connections are used to transmit patient clinical data to and from providers such as demographics, laboratory results, discharge summaries, radiology and other transcribed reports, medication history, immunizations, telemonitoring data, and Continuity of Care Documents (CCD).

Aggregation refers to the collection of each piece of data into unified locations, the VHIE and HDM. This allows VITL to bring all of the collected clinical data together from many sources, so providers may discover insights about a patient's medical condition they may not see in a single patient record. With all the data in one place, large amounts of it can be simultaneously analyzed for trends and predictions.

Vermont's Health Information Exchange Ecosystem



Data Collection & Aggregation, *cont.*

Notable projects completed this year that further increased VHIE clinical data included hospital care summary connections. Care summaries, known by the technical name of Continuity of Care Documents (CCD), contain patients' entire medical histories. CCDs from hospitals are especially important because they may include data from acute care, specialty care and primary care facilities.

During 2017, VITL completed interfaces to receive CCDs from four hospitals: Brattleboro Memorial Hospital, Northeastern Vermont Regional Hospital, Northwestern Medical Center, and The University of Vermont Health Network's Central Vermont Medical Center. VITL now receives CCDs from seven of Vermont's fourteen hospitals.

VITL added 50 additional immunization interfaces, which transmit vaccination information from health care organizations to the Vermont Immunization Registry. A total of 205 health care organizations are now sending immunization data to the VHIE.

VITL completed interface projects during 2017 that improved the amount of data being collected. Additional work is needed to increase the collection and aggregation of data, and to improve patient matching (techniques used to match a patient's data contributed by one health care provider with data from other providers).

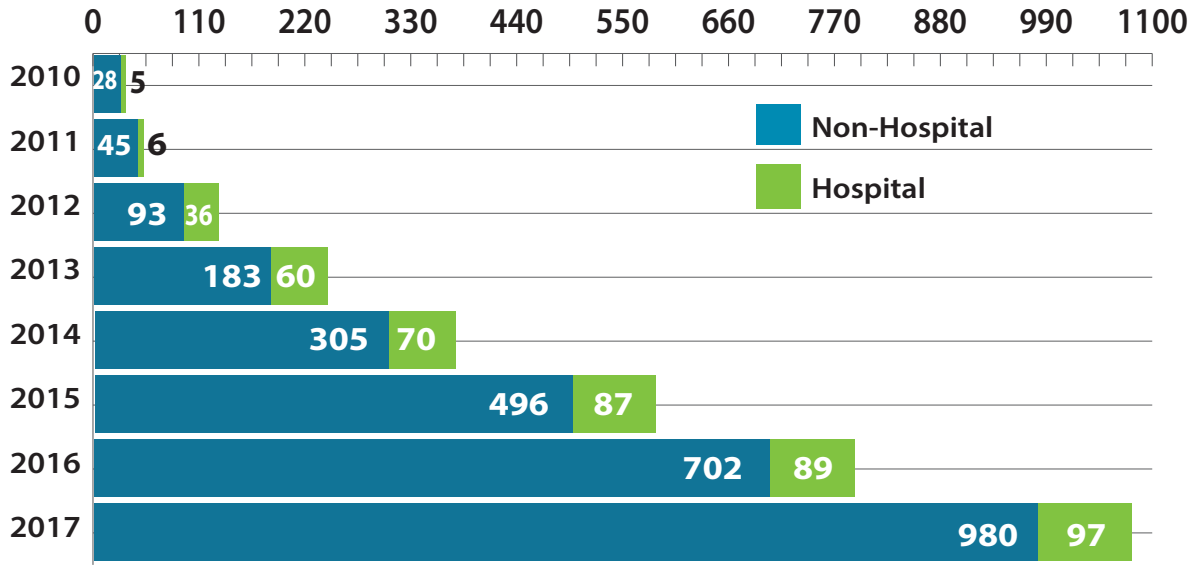
Home Health Agency Connections

Post-acute and hospice care delivered in a home-based setting can improve health outcomes in meaningful ways. As more care is delivered in home-based settings, the need to share patient information about those visits is important for better coordinated care.

VITL has made great strides in increasing the amount of patient clinical data available from home-based settings through the VHIE, and then made available to other providers.

Patient encounter data called Admission, Discharge and Transfers (ADT), and Continuity of Care Documents (CCD) are important pieces of information for other care givers such as primary care and specialty providers, who are coordinating care across a number of organizations. During 2017, VITL completed 15 new ADT and 14 new CCD connections to transmit data from home health care EHR systems to the VHIE.

Cumulative Interface Count by Calendar Year



Improving Provider Access to Clinical Data

Telemonitoring Connections

Central Vermont Home Health & Hospice (CVHHH) and The Visiting Nurse Association of Chittenden and Grand Isle Counties (VNA) provide in-home telemonitoring services for patients with complex health conditions, like heart disease or respiratory disorders.

> *"For all of the benefits of telemonitoring, the data from the home monitors was locked in a system that was separate from our EHR. Now, any provider with whom we coordinate care for our patients can have access to this data, which may be crucial in making adjustments to their care plan or to their medications."*
>
> *Judy Peterson, president and chief executive officer at the Visiting Nurse Association of Chittenden and Grand Isle Counties*

Telemonitors are easy to use touchscreen tablets that prompt patients to measure and record their vital signs at home daily. The information is transmitted wirelessly to the home health agency where it is monitored and reviewed by nurses.

Until now, data from the in-home devices were only available within the telemonitoring system. If data were needed by a doctor or another health care provider, it had to be manually transferred, most likely by secure fax to that provider.

However, with the help of a grant from the Vermont Health Care Innovation Project, the VNA and CVHHH were able to connect their telemonitoring systems to their electronic health record (EHR) systems, and then work with VITL to create a connection to carry the results from their EHRs to the VHIE. The data collected at a patient's home is now immediately available to any other provider at the home health agency, or to other treating providers in Vermont.

Veterans Affairs Connections

The first interface between the VHIE and an external health information network was launched in May, when a connection was established with the Veterans Health Information Exchange, also known as the Virtual Lifetime Electronic Record (VLER) program.

This "query/retrieve" connection allows clinicians at the VA to view patient records from contributing health care organizations across Vermont and the surrounding region. Likewise, health care providers in Vermont can view health data from the VA medical system using VITLAccess, the secure provider portal to the VHIE.

This bi-directional exchange of data can improve transitions of care between veterans and health care facilities. Timely, accurate information may help reduce duplicative testing, lower costs and improve the quality of care for veterans.

> *"As a psychologist working with veterans, I can't overemphasize just how important it is to securely share information with colleagues outside of the VA. It's important to have a complete picture of your patient's care, no matter where they receive it."*
>
> *Kenneth Major, PsyD, practicing psychologist, White River Junction Veterans Affairs Medical Center.*

Improving Provider Access to Data: Department of Corrections

The Department of Corrections provides medical care for inmates housed in Vermont. As with any other medical facility, access to patient information, especially laboratory results and specialist reports, helps to improve the quality of care provided. In 2017, VITL improved access to medical information by creating VHIE connections that deliver patient clinical data from:

- The University of Vermont Medical Center radiology reports and transcribed reports.
- Northwestern Medical Center laboratory results.
- Springfield Medical Care Systems laboratory results.

To the electronic health record systems of medical providers at:

- Chittenden Regional Correctional Facility
- Marble Valley Regional Correctional Facility
- Northeast Correctional Complex
- Northern State Correctional Facility
- Northwest State Correctional Facility
- Southeast State Correctional Facility
- Southern State Correctional Facility.

VITLAccess Provider Portal

Adoption and utilization of VITLAccess, the secure provider portal to the VHIE, have both steadily increased throughout 2017. Use of VITLAccess is restricted to authorized providers and their staff members in Vermont who are engaged in the treatment of a patient. There are now 2831 users at 167 health care locations authorized to use VITLAccess. Collectively, those users have made over 700,000 queries since the service was activated in early 2015.

Complementing the home health interface project, VITL continued to work with home health providers to ensure they have access to information about their patients from other care settings. Having the details of a hospital discharge summary in VITLAccess may help a visiting nurse improve the care they provide to patients at home. During 2017, VITL completed the onboarding process for all home health organizations. This ensures that providers at each of these organizations are utilizing VITLAccess to view patient information.

More than 207,000 patients have provided their written consent to allow providers to access their information with VITLAccess. Under the Vermont Health Information Exchange Consent Policy, patients must opt-in to share their information. However, the opt-in policy and process have limited the number of patients giving consent. Consideration for improvements for the consent process is needed.

VITLAccess Users

Care Settings

Primary/ Specialty Care	64	Designated Agencies	9
Home Health Agencies	19	Nursing Homes	3
Federally Qualified Health Centers	25	Urgent Care	5
Hospitals	7	Other	5
Hospital Practices	30	TOTAL	167

The Transition to a Value-based Payment System

The State of Vermont is continuing to move forward in the implementation of the All-Payer Accountable Care Organization (ACO) Model Agreement with the Centers for Medicare and Medicaid Services (CMS). To meet the ACO scale targets (which address the number of attributed patients in Vermont) and the Statewide Health Outcomes and Quality of Care Targets, OneCare Vermont must collect and analyze data on patients attributed to the payment system.

The VHIE and Health Data Management infrastructure (HDM) play crucial roles in aggregating that data from the many electronic medical record systems across the state. The data collected by the VHIE is combined with other data sources and systems to give OneCare a more comprehensive picture of their attributed patient population.

Value-based payment systems rely on data analytics to tie payment to patient outcomes. The quality of data available for population health analytics is important to the success of this model. Data quality has three attributes: The data are complete, which means that all the data possible for a given patient is collected; the data are accurate, meaning that the data collected for a patient are timely, up to date and correctly attributed to that patient; the data are consistent, meaning that from patient to patient, data are recorded using a consistent methodology.

There are also three distinct places where the quality of data can be positively impacted: At the source, within the VHIE and HDM, and within the population health analytics systems.

1. At the source - Health care organizations across the state must adhere to best practices within their electronic health record (EHR) systems. Data must be entered accurately, consistently and completely. VITL plays a role in disseminating best practices, but nothing can be done to improve data that are lacking in any of the three attributes.

2. Within the VHIE and HDM - VITL aggregates data from multiple sources in a way that does not diminish the quality of the data received from the sources. By following strict standards, the VHIE can collect and index data for a patient from multiple sources. VITL's role is to ensure that data from many sources are available and aggregated in a manner that is useful to downstream analytics. VITL has also implemented systems to standardize terminology, so that data recorded using one coding scheme can be accurately combined with data recorded using a different coding scheme.

3. Population health analytics systems - The downstream population health analytics systems must build the reports necessary to support the payment models. In doing so, the analytics systems can identify gaps and data quality issues which get pushed back either to VITL, or to the data source for remediation.

The relationship between data quality at the source, in the network, and within the analytics systems creates a virtuous cycle where the quality of data can be continuously improved.

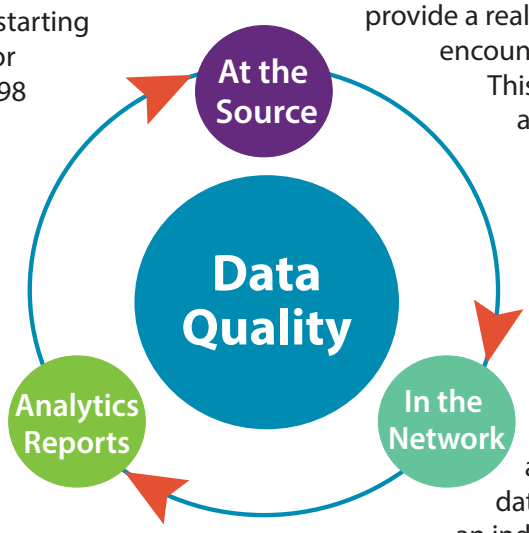
VITL completed two projects during 2017 to improve the quality of data being provided to OneCare Vermont through the HDM. An improved CCD parser, which went into production in June increases the speed, efficiency and accuracy of the extraction process. The enhanced parser extracts data in an analytics-friendly format, which streamlines the onboarding of new data contributors.

Population Health Analytics, *cont.*

The new extraction format reduced storage consumption by 50 percent. The ability to extract data correctly, even when improperly formatted, has increased the completeness of extracted data.

Matching patient data from multiple sources to OneCare Vermont's list of attributed patients is critical to maximizing the amount of information available for population health analytics. VITL conducted a pilot project in April 2017 which demonstrated that the match rate for Medicaid patients can be increased by 44 percent by adding the last known phone number to the attribution file. Following the success of the pilot, phone numbers were added to Blue Cross Blue Shield of Vermont attributed patients starting in September. The match rate for BCBSVT patients increased by 198 percent with this change.

Although both of these projects substantially increased the quantity and quality of the data being provided to OneCare Vermont, more work is needed to improve patient matching in support of quality patient care and health system measurement.



Vermont Population Health Initiatives

VITL continues to support other statewide population health initiatives.

Two terminology services projects with Capitol Health Associates were conducted in December, to improve the completeness of data that is sent to the Blueprint Clinical Data Registry. Laboratory data from different organizations may not be coded using the same set of meanings. Terminology services effectively translate data coded in one scheme to their matching code in another scheme.

VITL has implemented code to automatically validate immunization data collected from providers against a set of rules defined by the Vermont Implementation Guide for HL7 Immunization Messages. Incoming messages are validated against rules to insure accuracy. Nonconforming messages are rejected, and descriptive error information is returned to the practice so that they can take corrective action and resubmit the data.

Care Management Solutions

OneCare is implementing Care Navigator™, a care management platform offered by Blueprint Health IT to improve coordination among providers, and to meet the per-capita cost targets under the ACO model. VITL has recently completed a project to provide a real-time aggregated patient encounter data feed to Care Navigator. This Admission, Discharge, and Transfer (ADT) interface will provide information about patient encounters at health care systems across the state, giving care management teams information to guide treatment and care plans.

VITL continues to provide an aggregated patient encounter data feed to PatientPing, an independent clinical event notification service. PatientPing offers a variety of services to care managers and clinicians that notifies them when their patients are admitted to or discharged from a hospital or skilled nursing facility. PatientPing is a nationwide service, and by combining data from VITL with other sources, the service includes encounter data from other states.

During 2017, VITL continued its partnership with OhMD, a secure patient-to-provider and provider-to-provider messaging service, by introducing providers to the service.

OhMD is a very simple to use text messaging app, with built-in security and privacy that meets HIPAA standards. Secure texting has the ability to make care coordination faster and easier among all of the providers in a patient's circle of care.

Performance, Finance and Operational Summaries

Performance Metrics Tracking

VITL's latest contracts with the State of Vermont, which started on July 1, 2017, incorporate new performance-based metrics to ensure a strong interlock between the State's requirements and VITL's performance against contracted deliverables.

VITL has always followed industry best practices for project management, but it has re-engineered business operations and project management processes to ensure a linkage between technical project management and operational metrics. A system of detailed tracking worksheets was created to manage individual projects. Key information from those project plans is combined into summary tracking sheets, which are presented to the State in a series of reports and dashboards. A dashboard is a one or two-page summary of the status of a contract deliverable. By linking key project deliverables with a detailed project status, the State is assured of receiving a current and actionable status for each deliverable.

Monthly Dashboards (12):

- APD Interface Development
- CORE Interface Development
- Meaningful Use, Security Risk Assmt Consulting
- VITLAccess Implementation
- Blueprint Clinical Registry (BPCR) Onboarding Meeting Attendance
- Blueprint Management Meeting Attendance
- Blueprint Connectivity Report
- VHIE Service Level
- Health Datamart (HDM) Service Level
- Technical Support Interactions
- Monthly NIST Security
- Consent

Quarterly Dashboards (7):

- VHIE Access Report
- State HIE Assessment Participation
- Exchange Report
- VHIE Connectivity Report
- VHIE Interface Criteria Responses
- HCO Interface Reimbursement
- VDH Validation Report

Financial Summary

Vermont Information Technology Leaders, Inc. is a 501(c)(3) nonprofit incorporated in the State of Vermont with fiscal years that begin on July 1 and end on June 30 of the subsequent year.

The summary presented here is for the fiscal year that ended on June 30, 2017, and is extracted from VITL's financial statements which are audited yearly.

VITL receives revenue primarily from state and federal grants, with the remaining amount coming from services, as well as attendance and sponsorship fees from the annual VHIE Summit, which was held during October 2016.

Along with the finanacial summary on page 14 is a chart that displays information regarding VITL's federal grant funding, including grants passed through the Department of Vermont Health Access, and direct state grant funding for Fiscal Year 2017.

Page 14 Financial Summary Notes:

1. Other - This column contains the accumulation of several smaller commercial contracts.

2. Unallowable - This column contains valid business expenses which cannot be reimbursed or allocated to grants or contracts, in accordance with Federal Uniform Guidance.

3. Indirect - This columns contains VITL's indirect expenses. These costs are allocated to various grants and contracts, as shown in the line "Allocation of indirect expenses".

4. The values shown in the financial summary are based on VITL's draft FY2017 financial statements. The balance sheet for FY2017 can be found on the VITL website at https://vitl.net/about/financials

Financial Summary

**FY 2017 Draft Unaudited Financial Summary*

FY 2017 Revenue & Expenses	DVHA, OCV & Summit	SIM Grant	IAPD	Other (Note1)	Unallowable (Note 2)	Indirect (Note 3)	Total
REVENUE							
Federal and state grants	4,135,016	-	-	-	-	-	4,135,016
Contract revenue	-	862,173	744,332	-	-	-	1,606,505
Program service fees	955,148	-	-	239,492	-	-	1,194,640
Conference revenue	156,396	-	-	-	-	-	156,396
Interest Income	-	-	-	43	-	-	43
TOTAL REVENUE	5,246,560	862,173	744,332	239,535	-	-	7,092,600
EXPENSES							
Staff Earnings	1,368,080	126,738	236,506	77,892	20,164	759,185	2,588,565
Associated Benefits	673,627	62,404	116,453	38,353	9,929	373,814	1,274,580
Total Personnel Expense	2,041,707	189,142	352,959	116,245	30,093	1,132,999	3,863,145
Consultants	144,731	-	16,340	105	-	36,777	197,953
Depreciation	-	-	-	-	-	38,404	38,404
Education and Outreach	44,436	-	-	-	7,054	857	52,347
Insurance	76,825	-	-	-	-	20,705	97,530
Legal & Accounting	23,114	-	-	1,053	116	159,924	184,207
Medicity Data Services	1,018,284	92,100	-	4,500	-	-	1,114,884
Data and Network Services	356,629	1,835	49,534	125,968	-	68,474	602,440
Occupancy Expense	-	-	-	-	8,810	207,996	216,806
Staff Training and Recruiting	5,895	-	-	-	-	51,854	57,749
Office Supplies	3,778	-	-	-	37,785	23,735	65,298
Telecommunications	-	-	-	-	-	64,285	64,285
Travel/Conferences/Mileage	40,542	6,563	6,502	344	1,357	11,594	66,902
Information Technology	60,114	62,400	5,461	300	670	50,006	178,951
Legislative support		-	-	-	21,330	-	21,330
Reallocation of CHAC PM PM expenses	(117,554)	117,554	-	-	-	-	-
Allocation of indirect expenses	1,438,436	132,699	162,385	93,676	40,414	(1,867,610)	-
TOTAL EXPENSES	5,136,937	602,293	593,181	342,191	147,629	-	6,822,231
NET INCOME (LOSS)	109,623	259,880	151,151	(102,656)	(147,629)	-	270,369

FY 2017 Grantor Information	Pass Through Number	*CFDA Number	Federal Funding
U.S. Department of Health and Human Services, passed through the Department of Vermont Health Access:			
Medical Assistance Program	03410-1690-17	93.778	$83, 171
Medical Assistance Program	03410-256-17	93.778	$2,206,031
TOTAL			**$2,289,202**

* Catalog of Federal Domestic Assistance

Operational Statistics

Fluctuations in interface and message volume statistics by practice type may occur due to: 1) practice closure or acquisition by another health care organization, 2) prioritization of interface development by stakeholders, and 3) suspension of practice or hospital data feeds during migration to a new electronic health record.

	2017	2016	2015
Interface Statistics			
Total number of clinical message interfaces to the VHIE	1077	955	721
Primary care organizations	311	324	288
Federally Qualified Health Centers (FQHC)	232	214	180
Specialty care organizations	269	181	126
Hospitals	97	99	98
Mental health designated agencies	121	121	13
Long term care (nursing homes)	7	7	7
Home health and hospice agencies	37	6	6
Commercial laboratories	3	3	3
VHIE Clinical Message Statistics			
Total number of messages received	68,237,540	68,045,283	60,386,359
Patient demographic messages	49,596,157	50,906,759	44,705,638
Laboratory, pathology, radiology or transcribed report messages	13,860,584	14,314,410	14,127,842
Continuity of care messages	4,121,895	2,141,672	1,013,828
Immunization messages	658,904	682,442	539,051
VITLAccess Subscriber Statistics			
Number of health care locations using VITLAccess	167	146	100
Number of authorized users of VITLAccess	2831	2542	1932
Number of patient data queries performed using VITLAccess	286,131	270,122	162,359
Number of unique patient records accessed	23,017	19,865	23,313
Consumer Consent Statistics			
No. of consumers who gave consent for provider access to VHIE information	207,411	99,027	48,432
Number of consumers who declined to give consent for provider access to VHIE information	10,149	3,760	2,004
VITLDirect Subscriber Statistics			
Number of organizations using VITLDirect	15	8	9
Number of VITLDirect user IDs	89	79	79
VITL Audit Statistics			
Number of law enforcement requests for access to the VHIE	0	0	0
Number of emergency patient access audits performed	64	46	150
Number of audits requiring follow-up with health care organizations	6	12	4
Number of findings arising from emergency patient access audits	5	1	0
Number of patient consent audits performed	405	514	0
No. of consumer requests for audit of access to their VHIE patient information	4	1	2
Number of consumer requests for a copy of their VHIE patient information	3	3	2

VITL's Vision for 2018

In anticipation of the release of the State of Vermont's Act 73 report, the VITL Board of Directors met during the fall of 2017 to determine what more VITL can do to support health care delivery in Vermont. The board charted a strategic path for VITL, to better support provider utilization of health information technology and Vermont's transition under the All-Payer model.

A result of the board's deliberations was the development of an updated vision for VITL:

> *Utilize VITL's health data management capabilities to support health care and community providers in achieving a coordinated, value-based health care delivery system, consistent with the goals and principles of Vermont health care reform.*

Prior to the board retreat, VITL retained Strategies for Tomorrow (SFT), an HIE consulting firm, to assist in understanding where VITL currently stands, and develop goals and strategies designed to achieve the updated vision.

To accomplish this comparison, SFT utilized three stages of HIE:

- Stage 1 - shift from paper to electronic medical records, develop the HIE network and aggregate data for exchange.
- Stage 2 - provide tools to access and use clinical data for point of care decision making, and to support coordination of care.
- Stage 3 - transform clinical data for analytics, quality reporting and population health.

SFT concluded that all of the leading HIEs in the comparison were considered to be advanced. Like VITL, they have lots of data, lots of data sources and the necessary technology infrastructure.

VITL began offering access to data in the VHIE in 2015, after accelerating network development to achieve a 64 percent capture rated of available data. There is an acknowledged perception among VITL customers—health care providers and the State of Vermont—that VITL's tools are not yet widely utilized and indispensable. VITL recognizes there is a need to work with providers to ensure the tools it offers are useful, to engage its customers better in understanding the benefits of the tools, and to integrate them seamlessly into their workflows.

While VITL has started Stage 3 services unlike many other HIEs, there is still more to do.

The State of Vermont has made a commitment to health care reform by enacting Act 48 and entering into the ACO All-Payer Model Agreement with CMS/Medicare. Vermont cannot achieve success in its health care reform initiatives without timely, accurate and useful health information. Therefore, VITL is working with the State of Vermont on a 2018 work plan that combines recommendations from the Act 73 report, with the strategic path laid out by the VITL board of directors.

The latest reform innovations in Vermont create new opportunities and challenges for all stakeholders. Two years ago VITL recognized the shift toward value-based care, and responded by developing health data management capabilities (data normalization, standardization and transformation), in support of the Blueprint for Health and accountable care organizations.

VITL's vision and strategic plan for the future, combined with State and stakeholder partnerships, will identify opportunities, areas for improvement, and a secure path for health information exchange that improves care and lower costs for Vermonters.

2018 Recommendations

VITL is required to provide recommended legislative changes and funding needs in its annual report. As a result of the work VITL and the State will do to fulfill the Act 73 report, the State's upcoming HIT/HIE Plan, and VITL's strategic vision, VITL anticipates that statutory changes to the membership of its board of directors will be required, and that it also may be appropriate to further modify other oversight criteria related to the VHIE. These changes can be addressed in later bienniums rather than the current session, after the State and VITL complete the ongoing work plan as described above.

With respect to funding, VITL agrees with the State Act 73 report that the HIT fund should be continued. VITL and the State should work together to identify the services of the VHIE required by the State, and to strengthen or add performance metrics related to those services in the SOV/VITL contract in the coming fiscal year and beyond. Any further recommendations regarding funding levels or uses will likely flow from the State's HIT/HIE Plan due at the end of 2018, and from completion of the SOV/VITL work plan described elsewhere.

Below is a summary of the key items VITL will work on with the State of Vermont and other partners to implement VITL's strategic plan, and fulfill the recommendations of the Act 73 report.

1. Governance and operations - In accordance with the Act 73 report, VITL will address board membership and operational recommendations to strengthen its delivery of services to the State and other customers.

2. Core Mission - For VITL to be successful, there must be a clear understanding of the capabilities and services that constitute the definition of the core mission. VITL/State/stakeholders/legislature should work together to formulate this definition, and use it to develop the activities, outcomes and performance aspects of VITL's agreements.

3. Adoption and Utilization - New technologies should be implemented to support health care organization workflow integration by accessing the VHIE directly from EHRs; increase the types and sources of data available in the VHIE; incentivize providers to access the VHIE (particularly those participating in value-based payments); improve opportunities for patient care coordination.

4. Financial Sustainability - Critical to VITL's future is the development of a reliable model for financially sustaining the investments made in the organization. The legislature should extend the current HIT fund, with the expectation that the State and VITL will work with health care providers across Vermont to develop a fair and reasonable approach to financial sustainability, based on successful models in other states. VITL would support consideration of the Act 73 report recommendation to complete an inventory of existing and projected sources of funds to help guide priorities.

5. Quality of Data - VITL recommends the following: stakeholders agree on a definition for quality data; metrics be developed to measure improvements; develop a statewide, best-practice approach to improving data quality with resources that support consistent and complete data entry at health care provider locations; expand VITL's capabilities to perform data normalization; produce dashboard reports that measure improvements in data quality.

6. Patient Matching - VITL utilizes a proprietary master patient index (MPI) tool used by many other regions and states. The MPI captures all patients submitted to the network regardless of whether they live in Vermont or out of state. In 2017 VITL piloted a new MPI tool that resulted in a 25 percent improvement in patient match rates. VITL recommends working with the State on the evaluation and selection of an MPI tool that can improve the match rate in Vermont.

2018 Recommendations

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7. Consent - Currently, 25 percent of Vermonters have been asked to provide consent for their clinical data in the VHIE. Of those asked, 96 percent have chosen to opt-in and four percent have chosen to opt-out. Patients are asked to consent when they seek care. As the State's Act 73 report correctly notes, there are process barriers that may be contributing to the overall number of patients who have been asked to opt-in. VITL recommends offering resources to providers to communicate with patients regarding consent, obtain consent in advance of seeking care, and support streamlining current consent processes. VITL would support further consideration of the Act 73 report recommendation to modify the consent policy in order to maximize appropriate patient participation.

8. HIT Plan - VITL recommends the development and approval of a statewide approach to HIT and HIE in line with Act 73 report. A statewide plan will assist VITL, the State and other stakeholders with developing priorities for achieving its core mission in line with other major initiatives; ensure accountability, performance and transparency; develop approaches to evaluating outcomes and opportunities for improvement; identify the ways that education and outreach for health information technology (HIT) initiatives should be undertaken. VITL looks forward to supporting the State as needed in the development of the HIT/HIE plan that will be submitted for approval to the Green Mountain Care Board during 2018.

Goals for 2018 to 2020

- Address priority issues identified in the Act 73 report.
- Focus on operational stability and achieving core services, including management of operations and board leadership changes during transitions.
- Develop stronger strategic partnerships with the State of Vermont, OneCare Vermont, and VITL's other provider partners including the Blueprint for Health.
- Work with the State and its partners to develop the HIT/HIE plan.
- Increase utilization of VITL's services by providers and other users.
- Partner with communities to solve local problems using health information exchange solutions, such as transitions of care and hospital readmissions.
- Use community initiatives to demonstrate how to achieve higher provider utilization, greater patient participation, improved outcomes and return on investment.
- Work with the State to develop a financial sustainability model by demonstrating the value of VITL's services through a return on investment to its stakeholders.
- Engage multiple stakeholders in VITL's mission in ways that best suits their unique situations and ensures each has a voice: payers, self-insured employers, health systems, smaller and independent providers, community care and human services agencies.

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