VITL Impact Assessment
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VITL Impact Assessment Study

Executive Summary
VITL has completed two studies addressing the impact of the organization and health information exchange on healthcare in Vermont. One study evaluated changes in patient expenditures at a global level, based on the Clinical Technology Maturity of patient centered medical homes. The second study was a survey at the practice level, to determine the operational impact of installing laboratory interfaces. The focus was to investigate the shift in activities that may occur by repurposing staff activities from manual entry of laboratory results to receipt of results through an electronic interface. The methods and results from each study are presented in this report.

Introduction
VITL

Vermont Information Technology Leaders, Inc. (VITL) was founded on a vision shared by health care stakeholders across the state and realized through legislative action and funding from the State of Vermont and the U.S. Department of Health and Human Services (HHS). VITL is incorporated as a 501(c)(3) nonprofit organization located in Burlington, Vermont. It is designated by statute as the operator of the exclusive health information exchange for Vermont (18 V.S.A. §9352).

The Vermont Health Information Exchange (VHIE) — with its depth and breadth of connections throughout the state—is a clinical data network built to deliver valuable services to providers and provider networks. As of May 31, 2017 five hundred and ninety-eight (598) interfaces were in place such that the VHIE could securely receive clinical data from all Vermont hospitals, Dartmouth-Hitchcock Medical Center in New Hampshire, all of Vermont’s Federally Qualified Health Centers (FQHCs), 165
other primary and specialty care locations, eight of Vermont’s visiting nurse associations, one independent home health agency, and three commercial laboratories. The clinical data are then made available to health care providers and organizations through a web-based healthcare provider portal and in some cases by delivering test results directly into healthcare provider electronic health records. The portal, known as VITLAccess, gives providers access to a statewide, longitudinal health record for their patients that Opt-in to the statewide HIE. VITLAccess also offers treating clinicians the ability to query a database of filled prescription information from participating retail pharmacies across the U.S. Clinical messages are also stored in a Health Data Management infrastructure which organizes, prepares and manages the data for use by Vermont’s accountable care organizations (ACOs), the Blueprint for Health, the Vermont Department of Health Immunization Registry, and other downstream clinical uses. 501 Outbound interfaces are in place to deliver clinical data to 85 primary and specialty care locations, eight FQHCs, four designated mental health agencies, and three skilled nursing facilities.

VITL processes approximately twelve million clinical messages each month containing patient demographic information, laboratory results, radiology reports, transcribed reports, clinical care summaries and immunization records. Clinical messages adhere to Health Level Seven® International (HL7) standards and message types. Patient demographic data are used as input to the Master Person Index (MPI), which contains approximately 2.6 million unique patient identities.

The question of the value of a health information exchange is an ongoing topic of discussion. Hersh et al¹ conducted a systematic study of published literature addressing the benefits of health information exchange. Their work spanned the years 1990 through 2015, implying that was the time period when

* The MPI contains information on any patient receiving care in Vermont, not just information on Vermont residents.
the question was most prominent. Their review of the published literature concluded that the
demonstration of benefits in the studies was weak, and that more research was needed.

The full impact of HIE on clinical outcomes and potential harms is insufficiently studied,
although evidence provides some specific support for benefit in reducing use of some specific
resources and achieving improvements in quality of care measures. ... To advance our
understanding of HIE, future studies need to address comprehensive questions, use more
rigorous designs, and be part of a coordinated, systematic approach to studying HIE.\(^1\)\(^{[224]}\)

Evaluating the benefits of HIE are challenging. Approaches to quantitatively measuring the benefits
vary, however, a commonality is to study HIE related transactions in the hospital and emergency
department (ED). Everson et al\(^2\) studied the impact of Epic Care Everywhere private HIE in the
University of Michigan Health System. They concluded that there was an improvement in ED care,
resulting in reduced visit length; lower likelihood of imaging; lower average charges; and a lower
likelihood of admission. A study of two EDs in Western New York identified a 25% reduction in orders
for laboratory tests on patients for whom the RHIO’s database is being queried.\(^3\). Vest et al\(^4\) studied the
Rochester Regional Health Information Organization (RHIO) and determined that use of the RHIO may
relate to a reduction in readmissions.\(^4\) Dr. Jan Lee of the Delaware Health Information Network (DHIN)
stated that over 4 years there was a 21% reduction in the rate of ordering a specific set of high cost
imaging specific studies (reduced radiation exposure) and a 64% reduction in the rate of ordering high
cost laboratory studies.\(^5\) According to Bailey et al\(^6\) in a study of the MidSouth eHealth Alliance, the “HIE
was associated with decreased odds of diagnostic imaging ... and increased adherence with evidence
based guidelines ...”\(^{[176]}\). According to a study by Yaraghi, accessing clinical data through the HIE in ED
can reduce the number of orders for laboratory tests and radiology exams by 52% and 36%
respectively.\(^7\) The theme from these examples is that a benefit can be attributed to use of an HIE. The
potential dollar amount or specific time savings was implied, but not quantitatively established.
Study 1. Clinical technology maturity is associated with reductions in healthcare expenditures at patient centered medical homes (PCMH)

The objective of the VITL impact assessment is to determine whether health care expenditures are influenced by a health care organization’s level of interaction with VITL and the organization’s use of the VHIE. In the course of conducting the assessment, VITL developed the Clinical Technology Maturity Model. The model encapsulates the variety of VITL’s technical, data and community interventions into a single composite score for each PCMH. That composite score provides a simple means for conveying the complex relationships among VITL’s interventions and the financial and clinical outcomes at an organizational level. The relationships can inform VITL and its stakeholders on topics of operations and policy.

Methods

VITL impact assessment

Since 2006, VITL has been primarily supported by State and Federal grants and contracts which have enabled the development and expansion of the VHIE. The Vermont Health IT-Fund was established “as a special fund to be a source of funding for Medical Health Care Information Technology Programs and initiatives” (32 V.S.A. § 10301), including VITL. The VHIE facilitates the exchange of clinical information among providers for use at the point of care, and aggregates data in support of Vermont’s health care reform activities. VITL conducted an impact assessment to demonstrate the continued value of the VHIE and the return on Health IT-Fund investments to funders, stakeholders, clinicians and patients. This study is intended to respond to the following stakeholder questions:

1. What is the value of a Health Information Exchange (HIE)?
2. Why is Health Information Exchange important in Vermont and what are the expected outcomes?

3. How is the State benefitting from its investments in HIE?

Maturity models

The Software Engineering Institute (SEI) of Carnegie Mellon University has pioneered the concept of maturity models. The following statements provide a concise overview of maturity models as developed by the SEI.

“… (A) maturity model … is a set of characteristics, attributes, indicators, or patterns that represent progression and achievement in a particular domain or discipline. … A maturity model allows an organization or industry to have its practices, processes, and methods evaluated against a clear set of artifacts that establish a benchmark. These artifacts typically represent best practice and may incorporate standards … of practice that are important in a particular domain or discipline. … Architecturally, maturity models typically have "levels" along an evolutionary scale that defines measurable transitions from one level to another."

A maturity model can help organizations assess operations consistently, and allow for strategies that can lead to improved operations and quality. This concept is key for developing a maturity model to assess the impact of VITL interventions with PCMHs.

There are two types of maturity models:

- **Progression models** - Progression models represent a simple progression or scaling of a characteristic, indicator, attribute, or pattern where the movement up the maturity levels indicates some progression of attribute maturity. This category includes many proprietary
models developed by companies such as consultancies or product vendors. They do not measure capability or process maturity.

- **Capability models (process models)** – Capability models look at the broader development that reflects the maturity of the culture and the degree to which the capabilities are embedded in the culture. The levels in a capability model describe states of organizational maturity relative to process maturity.

There are numerous maturity models defined in service and manufacturing industries. Some well-known models that demonstrate the concept include:

- Capability Maturity Model Integration – CMMI Institute
- Organizational Project Management Maturity Model - Project Management Institute (PMI)
- Strategic Management Maturity Model - Balanced Scorecard Institute
- ITIL Maturity Model - ITIL (Information Technology Infrastructure Library)
- Continuity of Care Maturity Model - HIMSS Analytics

Although the model characteristics may vary, a common theme is that a maturity model should be concise, relatively simple to understand, and easy to implement.

**VITL Clinical Technology Maturity Model**

The VITL Clinical Technology Maturity Model is a progressive model. As a health care organization acquires, implements and uses technology, its overall maturity increases. Comparisons relative to other health care organizations on a maturity continuum would be expected to remain constant even as electronic health record (EHR) functionality increases and new technologies are introduced. The Clinical Technology Maturity Model does not evaluate quality of care or operational effectiveness.
There are three domains in the model reflecting different types of interventions – technical, data quality, and community collaboration.

**Technical Domain Interventions**

The core technical capabilities are the implementation of interfaces with the VHIE. Interfaces have different degrees of complexity, based on whether they are inbound or outbound, Health Level Seven® International (HL7) Version 2 or Version 3, the type of clinical data transported over the interface, or smoothly integrated with the functionality of the organization’s EHR.

**Data Quality Domain Interventions**

The core capabilities of data quality maturity are primarily associated with completeness of Continuity of Care Documents (CCDs), and the use of standard terminologies.

- VITL facilitates improved data capture and data standardization by conducting organizational data quality projects. Participation by an organization in a data quality project demonstrates an intent to improve data quality, with the expectation that improved and standardized data capture contributes to improved outcomes.

- The Centers for Medicare and Medicaid Services (CMS) clinical quality measures (QMs) for Medicare Shared Savings Programs (MSSPs) are a structure against which CCDs can be evaluated. CMS QMs were selected as data quality metrics because they are federally defined, and in Vermont have been used by non-MSSP Accountable Care Organizations (ACOs) for reporting.
Use of standard terminologies and code sets are ways in which organizations can compare and aggregate diagnoses, procedures and results for cross organizational analyses.

Scores were only assigned to an organization’s participation in a data quality project. Criteria for scoring CCDs and standard terminologies had not been established for this study.

Community Collaboration Domain Interventions

The domain encompasses several attributes that demonstrate the health care organization’s level of participation in the secure sharing and use of clinical data within its medical community. Several attributes of this domain include use of VITLAccess (the Vermont provider portal to the Vermont HIE), the extent of consultative interactions with VITL eHealth Specialists, and completion of a security risk assessment.

The three domains constitute the VITL Clinical Technology Maturity Model. The model is a generic approach to assessing the impact of an HIE on patient expenditures for patients who receive their primary care at a PCMH.

Clinical Technology Maturity Scoring

Each practice was scored as a zero (0) or one (1) on each of seven variables, and one variable scored as a zero (0), one (1) or two (2). The maximum score for any practice is nine (9). The variables and criteria for assigning scores are given in Table 1.
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<th>Domain</th>
<th>Variable</th>
<th>Description</th>
<th>Score</th>
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<tbody>
<tr>
<td>Technical maturity</td>
<td>One (1) inbound interface</td>
<td>One interface has been implemented and in production. Inbound interfaces are laboratory results, radiology reports, and other transcribed reports.</td>
<td>0 = has not been implemented</td>
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<td></td>
<td>Two or more inbound interfaces</td>
<td>Two or more interfaces have been implemented and in production. Inbound interfaces are laboratory results, radiology reports, and other transcribed reports.</td>
<td>1 = Have been implemented</td>
</tr>
<tr>
<td>Technical maturity</td>
<td>One (1) outbound interface</td>
<td>One interface has been implemented and in production. May be any of patient demographics (ADT), clinical summary (CCD or equivalent), or immunizations (VXU).</td>
<td>0 = has not been implemented</td>
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| Data quality maturity         | Data quality exercise | A Sprint is an exercise focused on specific clinical sites and consists of several activities to implement consent and improve end-to-end data completeness, accuracy, consistency and integrity. | 0 = Data quality sprint not performed  
1 = Data quality sprint completed                                                                 |
| Community coordination maturity | VITLAccess provider portal | VITLAccess is the VITL provider portal into the clinical data repository.                                                                                                                                 | 0 = Practice has not subscribed to VITLAccess  
1 = Practice has subscribed and installed VITLAccess                                                                                      |
| Community coordination maturity | eHealth Specialist hours | eHealth Specialists are VITL staff who assist practices with workflow associated with interfaces and EHRs, and improvements in data quality.                                                               | 0 = less than 100 hours total in 2014 and 2015  
1 = 100-200 hours total in 2014 and 2015  
2 = 200 or more hours total in 2014 and 2015                                                                                           |
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| Community coordination maturity | Security risk assessment      | VITL performs security risk assessments to facilitate practices’ compliance with HIPAA privacy and security | 0 = Practice has not participated in a VITL conducted security risk assessment  
1 = Practice has participated in a VITL conducted security risk assessment |

Table 1. Clinical Technology Maturity scoring rules

All variables except for eHealth Specialist hours are easily determined binary variables by presence or absence of a value. The scores for the eHealth Specialist hours were developed using hours of direct eHealth Specialist interactions with VITL clients. An eHealth Specialist is a VITL consultant skilled in the implementation and application of Health IT in practice settings. Some have prior practice management experience, and some also have a clinical degree. An eHealth Specialist supports a PCMH in a variety of ways, such as facilitating improved data capture, meaningful use compliance and improved and efficient clinical workflow. Sixty-nine percent of VITL clients received up to 100 hours in total during a span of two years: 2014 through 2015. Approximately 29% of the clients received between 100 and 200 eHealth Specialist hours. Two percent of VITL clients received in excess of 200 hours of eHealth Specialist consultative support. These thresholds were established to roughly correspond to standard deviations
of a normal distribution†, however, there is no associated statistical relevance. The thresholds establish a method to quantitatively segregate the data into meaningful categories to code as a zero (0) for less than 100 hours, one (1) for between 100 and 200 hours, or two (2) for greater than 200 hours. There were 116 PCMH practices represented in the study and scored on eHealth Specialist hours.

The Clinical Technology Maturity score for each PCMH is the sum of the individual scores on each variable. The minimum possible score was zero (0) and the maximum possible score was eight (8).

**Data Sources and Measures**

Expenditures were developed from the PCMH analytic files. Expenditure measures are developed for PCMH analytics at the individual patient level for all patients that are attributed during the year to each PCMH participating practice. The source of the measures utilized for this analysis is the eligibility and claims data available in the state’s all-payer claims database, the Vermont Health Care Uniform Reporting and Evaluation System (VHCURES). VHCURES includes the Vermont population covered by commercial, Medicaid, and Medicare payers.

The measures included in this project were total healthcare expenditures, excluding Special Medicaid Services (e.g., day treatment, residential treatment, case management, special school services). Expenditures were measured based on the allowed amount on claims, which included both the plan payments and the member’s out-of-pocket payments (i.e., deductible, coinsurance, and copayments).

\[
\text{Calculated allowed amount} = \text{[insurer] paid amount} + \text{copay} + \text{prepay} + \text{coinsurance} + \text{deductible}
\]

This generally represents the actual total healthcare expenditure related to the claim, summing the

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† Sensitivity analysis was not performed to determine if other thresholds might alter the results.
amounts paid by the insurer and the patient. It is not the billed amount, or charged amount from the provider.

**Analytic Statistical Methods**

PCMH practices vary significantly in the patient populations they serve. There are variations in age, sex, insurance and patient acuity. Estimates of the impact of the intensity of VITL interventions with practices on the outcome expenditure were adjusted for these and other differences using a regression model. The unit of analysis for the regression model was the patient. For each patient, the practices' measures for the VITL data source were added as a variable to the PCMH analytic file.

The adjustments for variables included the following:

- Age and gender Interactions (males 1-4, females 1-4, males 5-11, females 5-11, males 12-17, females 12-17, males 18-34, females 18-34, males 35-44, females 35-44, males 45-54, females 45-54, males 55-64, females 55-64, males 65-74, females 64-74, males 75-84, females 75-84, males 85+, females 85+)
- Payer type (Commercial, Medicare, Medicaid)
- Primary care practices’ percent of patients enrolled in Medicaid
- Primary care practices’ percent of patients enrolled in Medicare
- Medicaid-Medicare dual eligibility status
- Medicare disability status
- Medicare End-Stage-Renal-Disease status
- Maternity (interaction with Medicaid status)
- Special Medicaid Services (patient had >$300 in SMS cost during the year)
• Patient has a diagnosed Blueprint targeted chronic condition (e.g., diabetes, asthma, coronary heart disease, congestive heart failure, depression)

• Overall patient health status based on 3M Clinical Risk Groups (e.g., healthy, single chronic disease, multiple chronic diseases, cancer)

For consistency, the regression model used the same variables for risk-adjustment as used in other Blueprint analyses and reports.‡ The analysis was based on the practice level risk adjusted level of expenditure and the practice level maturity model score.

Results

Data analysis included 116 PCMH practices representing 308,157 attributed Vermont patients for the calendar year 2015, or approximately 50% of the total population of Vermont. The claims data had previously been extracted and risk adjusted for the Blueprint study. The PCMH practices included adult and pediatric practices.

The statistical analysis was a linear regression with average practice expenditure per patient as the dependent variable and maturity level as the independent variable. The analysis of the 116 practices shows that each unit increase in practice Clinical Technology Maturity is associated with a mean of $59.00 reduction (95% CI -$5 to -$113) in expenditures (excluding Special Medicaid Services (SMS)) per patient per year.

A graph of the data with the best fit line is given in Figure 1. The vertical axis is the average per patient expenditure, excluding Special Medicaid Services for the calendar year 2015. The horizontal axis is the

‡ Details on the application of the risk adjustments may be obtained from the Vermont Blueprint for Health, Department of Vermont Health Access http://blueprintforhealth.vermont.gov/reports_and_analytics/hospital_service_area_profiles
Clinical Technology Maturity score. Each dot in the graph represents a single practice’s location in the graph based on its Clinical Technology Maturity score and average per patient expenditure.

Figure 1. Graph of average patient expenditures by PCMH versus clinical technology maturity level. The best fit line represents the negative slope of expenditure per increased Clinical Technology Maturity.

The best fit line represents the negative slope of expenditure per increased Clinical Technology Maturity.
Discussion

The analysis demonstrates expenditure reductions are directly associated with individual patients. The use of claims data to evaluate patient expenditures associated with HIE interventions appears to be an approach not discoverable in the literature. As PCMH practices increased their Clinical Technology Maturity there was an associated reduction in per capita annual expenditures. The expenditure reduction was more noticeable at higher levels of maturity.

There are variations in expenditures at each level of Clinical Technology Maturity which are not explained by the model. Further investigation of the variability within a maturity level may offer insights into best practices related to Clinical Technology Maturity. It may also identify components of a Clinical Technology Maturity Model that should be added or removed for improved use of the model and assessment of the impact of an HIE.

There may be other factors contributing to the reductions warranting further investigation to isolate the effects of Clinical Technology Maturity. It is not feasible nor desirable to conduct a study with a control group of practices and experimental groups that have realized various levels of clinical technology maturity. In addition to logistics, ethics and costs of designing and executing a controlled study, a critical confounding factor is the impact of other initiatives. For example, the Blueprint offers patient-centered care delivered by multi-disciplinary staff. VITL was designated a Regional Extension Center by the Office of the National Coordinator for Health IT between 2010 and February, 2014, through which it provided Meaningful Use assistance to eligible providers and hospitals. These are two examples of other healthcare reform initiatives that may also contribute to operational improvement demonstrated by reductions in expenditures. The effects of these other improvement initiatives need to be investigated to obtain a more thorough perspective of HIE’s value proposition.
Conclusions

The study analyzed per patient expenditures measured by claims data related to increasing maturity of PCMHs. The results demonstrated that VITL’s interventions in three domains are related to practice performance and associated with a $59.00 reduction in per patient annual expenditures. These results can inform other organizations attempting to convey the relative value of their health information exchange to their stakeholders, and provide useful information for HIE policy and strategic planning.

A quantification of the reduced expenditures related to VITL’s interventions were an attempt to answer stakeholder questions. While there is a significant statistical relationship, the study raises other important policy and operational questions:

- What is the nature of the variability in expenditures within a maturity level?
- Why do some practices have low expenditures and low maturity?
- Would additional maturity factors change the results?
- What interventions have the most impact on practice patient expenditures?

It is important that an organization and its stakeholders recognize the value of health information exchange and are aware of the factors that contribute to enhancing Clinical Technology Maturity. Continued refinement of the questions and further analyses would facilitate HIE’s focus on operational and strategic initiatives necessary for their sustainability and fulfillment of their mission.
Study 2. Laboratory interfaces enable health care organization staff to repurpose to value added activities.

Methods

VITL conducted a survey in early 2016 of its clients who had transitioned from manual entry of laboratory results to an electronic laboratory interface. The clients had generally received laboratory test results by fax or phone. After a laboratory interface was implemented, laboratory results were received directly by the healthcare organization’s electronic health record via the VHIE. The survey collected data that would enable VITL to compute the staff time in a HCO spent performing manual data entry of laboratory results before an interface was implemented, and the staff time spent on updating their EHR with laboratory results acquired through a laboratory interface. Most surveys were administered on site with an HCO employee who was involved in data entry before and after implementation of a laboratory interface.

The benefit to a HCO has a time and compensation component. An assumption is that there is intrinsic value to a HCO if an employee is able to spend time on tasks for which they were hired and compensated, compared to tasks that they perform that do not align with skills and job description. The time component is the difference in time spent between manual data entry and laboratory interface results. Manual data entry was defined as the time and effort taken to record incoming lab results in the practice’s EHR. This could be any number of activities in addition to keyboarding. The compensation component is the monetized benefit or disadvantage to the HCO of less or more time spent with an interface compared to manual data entry.

The survey questions were:

1. How much time was spent each day by each employee performing manual data entry prior to a laboratory interface?
2. How much time was spent each day by each employee performing data entry after an interface was implemented and operational?

3. What were the roles (nurse, clerk, physician, etc.) of the employees who performed the data entry or results acquisition?

4. What was the compensation by role of each employee? (Compensation by individual was not requested nor collected.)

The answers to the questions were recorded by a VITL employee. Questions 1 and 2 targeting the time spent each day performing a task were presented as five intervals for the interviewee to select: less than ½ hour, ½ to 1 hour, 1 to 1 ½ hours, 1 ½ hours to 2 hours, and more than 2 hours. This approach was to enable the interviewee to recall an average block of time rather than a discrete duration. The VITL employee was able to answer clarifying questions during the interviews, for example, when an interface was to be considered in production mode, or how to record time in relationship to additional laboratory or other interfaces. The clarifying questions were not perceived to bias the responses.

Results

Surveys were completed by 34 HCOs: 18 primary care practices, 6 specialist practices, 2 mental health agencies, 2 nursing homes, and 6 federally qualified health centers. On average the HCOs spent 1.6 hours less time each day updating their EHR after an interface was implemented. The time savings reported ranged from a minimum of 0 hours (no time saved) to a maximum of 2 hours saved each day. The organizations that responded that no time was saved each day generally had concerns unrelated to the interface. For example, one practice did not like the presentation format of the results in their EHR, so they manually re-entered the results. The selection of 2 or more hours by an interviewee was conservatively recorded as 2 hours, as the actual time spent each day may have been more than 2 hours but not recorded at that detail. Not all practices provided compensation by role, as this may have
identified a specific individual’s compensation. Two of the practices that provided total compensation by role recognized $8,700 and $9,800 respectively in annual salary repurposed. The value for any specific HCO may be computed as the reduction in data entry time multiplied by the appropriate employee’s compensation.

Discussion

It is important to understand that the monetized time that is repurposed does not represent a cost reduction or cost avoidance to an organization. An employee who repurposes their time from manual data entry to more productive tasks will deliver more value to the HCO. For example, a nurse who spent on average 1.5 hours per day performing data entry of laboratory results would be perceived to provide more value to the HCO when the 1.5 hours is repurposed to patient care. A testimonial from the owner of a pediatric practice asserted that the repurposed labor did represent value to that practice.

The study quantitatively demonstrated that staff can be repurposed to other tasks when electronic receipt of laboratory results replaces manual data entry. The results of this study indicate the value of laboratory interfaces, and that the value can be monetized. However, a broader interpretation of the results necessitates additional controlled studies before an HCO can rely on these results for their specific practice. Factors to control in a future study include potential inaccuracy of staffs’ recollections of who performed data entry, their time spent performing data entry, actual employee compensation, and the value of the tasks that were performed after interface implementation. The study did not attempt to evaluate whether there was a difference in accuracy of the results in the EHR due to an automatic update compared to manual data entry, nor the value of the improved timeliness of receiving laboratory results through an interface.
Implications for Policy & Practice

The results demonstrated that implementing a laboratory results interface has benefit for a healthcare organization by enabling staff to perform more productive duties for which they were compensated. It provides a baseline from which a HCO can evaluate the costs of implementing an interface, versus the value of receiving accurate and timely results without assigning a clinical person to perform data entry. The study focused on laboratory results only. By extension, there would appear to be additional value in receiving radiology reports, discharge summaries, and other reports electronically rather than typing or scanning the results into an HCO’s EHR.

Final Remarks from John K. Evans, VITL President/CEO

Since VITL’s inception, the impact of health information exchange in Vermont has primarily been anecdotal, subjective and based on feedback from clinicians and health care organizations that use the data in the VHIE as well as the tools and resources deployed by VITL, to inform the care they provide to patients and to improve the management and health of the populations they serve.

The two studies undertaken in fiscal year 2017 begin to quantify the potential positive impact that VITL and the exchange of health information are having in Vermont. These studies also identify the opportunities to pursue additional research which can better isolate the specific aspects of VITL’s interventions, as well as the extent to which access and use of data from health care organizations involved in the care of Vermonter, are associated with utilization and reduced costs.

VITL and many health information exchanges across the United States are similarly challenged with addressing stakeholder questions regarding the value and importance of HIE, the expected clinical and financial outcomes, and the overall benefits that organizations, particularly state governments, derive from ongoing investment in this relatively nascent area of healthcare.

It is significant that the study that analyzed per patient expenditures related to increasing maturity of
patient center medical homes involved in the care of almost half of all Vermonters, demonstrated that VITL’s interventions are related to practice performance and associated with a $59.00 reduction in per patient annual expenditures. The State of Vermont’s financial support over the last ten years has allowed VITL to build a clinical data network that clinicians can use for both point of care decision making as well as for managing population health under healthcare reform.

The two studies conducted in fiscal year 2017 begin to inform the return on the investments made in VITL by the State of Vermont and the significant future potential that the exchange, access and use of healthcare data can have for improving care and reducing the cost of care for Vermonters.
References


