**Evaluating Options for the Integration of Electronic Medical Records
With the
Vermont Prescription Monitoring System**

In Accordance with Act 75, (2013), Section 13a,
*An Act Relating to Strengthening Vermont's Response to
Opioid Addiction and Methamphetamine Abuse*

VERMONT

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Act 75, Section 13 (a)
November 24, 2014

Executive Summary

Pursuant to Act 75 pf 2013, the following report provides options for integrating the Vermont Prescription Monitoring System (VPMS) with the electronic medical records (EMRs) through the Vermont Health Information Exchange (VHIE) to improve access to timely and accurate prescription history information in a private, secure environment, with minimal costs and minimal workflow disruption to health care providers.

The Vermont Department of Health (VDH) conducted a study to determine the feasibility of integrating VPMS into provider electronic health records (EHRs) through the VHIE. This is an appropriate long-term goal. However, the experience of VDH integrating the immunization registry and provider EHRs, a project which is only partially complete after four years, demonstrates the complexity of the task. The integration of VPMS and EMRs will require significant planning, coordination and resources. Given the complexity and the number of EHR vendors and health care practices involved, a cost estimate cannot be provided at this time. VDH recommends that the short-term solution outlined as Option 1, and involving a single sign-on process, be implemented as soon as is practical. This will enable health care providers throughout Vermont to more easily access comprehensive patient data and assist them in providing effective patient treatment.

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Introduction

Act 75 of 2013, *an act relating to strengthening Vermont's response to opioid addiction and methamphetamine abuse*, charged the Department of Health with submitting a report evaluating options for integrating electronic medical records with the Vermont Prescription Monitoring System (VPMS). Specifically, the report was expected to include an assessment of the feasibility of integration, identification of potential barriers to integration and an estimate of the costs associated with integration. The following report responds to this directive.

Prescription drug misuse and overdose is one of the most rapidly growing health concerns in the United States. The Vermont Prescription Monitoring System (VPMS), created in 2016 by Act 205, addresses prescription drug abuse by providing a tool to prevent diversion and abuse of prescribed controlled substances while ensuring their availability for legitimate medical use. The VPMS, located in the Vermont Department of Health, tracks dispensed controlled substances, the drugs that are most likely to lead to misuse, abuse, or dependence when not used properly.

The current VPMS system, however, requires additional work on the part of healthcare providers. Providers must either interrupt work flow and log on to a separate data system to access the VPMS, or write prescriptions or dispense controlled substances without consulting the VPMS. The latter option leaves the health care professional without information needed to make important clinical decisions.

Research shows that simplifying the process for accessing information increases use of prescription monitoring programs. [1] There are a variety of options for accomplishing this ranging from simply providing a hyperlink to the prescription monitoring program portal in the EHR to building an interface between the EHR, VHIE and VPMS. In Vermont, several possible solutions have been evaluated for this report.

Definitions

Electronic Health Record (EHR) - an EHR is a medical record of all the standard medical and clinical data gathered in one provider's office. EHRs may, with connectivity, go beyond the data collected in the provider's office and include a more comprehensive patient history.

Health Information Exchange (HIE) - HIE allows doctors, nurses, pharmacists, other health care providers and patients to electronically access and securely share a patient's vital medical information that is contained in an EHR—improving the speed, quality, safety and cost of patient care. Unfortunately, EHRs have been built by disparate vendors, use unique codes, and have no transmission standard for exchanging patient data between healthcare entities (also known as data interchange). This is making it very difficult for different health information systems to communicate with other systems outside their private networks. An HIE makes it easier for the different systems to send and receive information. Vermont's state-wide health information network, or Vermont HIE (VHIE), is operated by Vermont Information Technology Leaders (VITL).

VITLAccess -- The VHIE offers a provider portal, called VITLAccess, and provides a patient-centric view of a patient's comprehensive health record from multiple organizations. It is important to realize that VITLAccess is not an EHR. VITLAccess is a portal to access information that has been made available by other health organizations (and subject to the appropriate authorization and legal restrictions). The information available includes lab test results, radiology exam reports, clinical and discharge summaries, and more.

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[1] http://www.healthit.gov/sites/default/files/work_group_document_integrated_paper_final.pdf

PDMP - Prescription Drug Monitoring Program is the term for electronic drug monitoring databases such as the VPMS.

Provider query- This function is used by registered VPMS providers to create queries that can be used to report information about patient's controlled substances history.

Options for Integration

Two options for accomplishing integration of VPMS and EHRs were analyzed for their feasibility, cost, practicality and complexity. The analysis of each option and challenges associated with each follow. Option 1 is a short-term solution for integration, whereas Option 2 is a longer-term solution that will require more analysis and planning.

Option 1

This option would enable access to VPMS from the VITL HIE Portal, VITLAccess. (Figure 1) A prescriber logs on to VITLAccess and is able to use VPMS without the need to sign on to another system. This strategy offers the following benefits:

- Fewest privacy and security concerns
- Most scalable and flexible
- Fastest timeline to deploy
- Less cost to connect and maintain service
- Vermont, its patients and providers remain central to the solution and its deliverables
- VDH remains in control of VPMS user access and maintains the ability to determine which users have accessed the system.
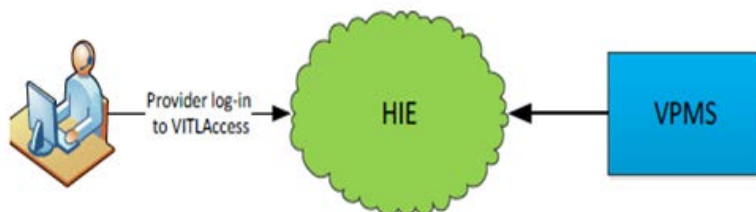

Figure 1

Option 1 Challenges

- Implementing the common VITLAccess and VPMS sign on minimizes privacy and security concerns. It is not expected that data will be transmitted or stored between the two systems, thereby reducing concerns surrounding the secure transmission and storage of data.

- The user-based authentication model being pursued by VITL will allow VDH to remain in control of VPMS user access. Both VPMS and VITL perform user access audits for security and utilization purposes. This will not have an impact on those individual VITL and VPMS activities.

- Integrating the VPMS view within VITLAccess will require the development of a Business Associate Agreement between VITL and VDH. VDH would also be responsible for maintaining any agreements with physicians or organizations that are required to create VPMS user accounts.

Specific Technology Needed

The single sign-on technology from VITL HIE Portal directly to VPMS requires a methodology to allow provider access to the VPMS via VITLAccess. This technology currently exists and is available through Medicity, the technology vendor supporting the VHIE. Identification of any additional software requirements for VPMS needs to be investigated.

Option 2

This option connects a provider electronic health record system to the VPMS via HIE. (Figure 2) This solution is "seamless" provider access to VPMS. An interface would be implemented between the EHR, the HIE and the VPMS so a prescriber can open a patient's record in the local EHR and be able to see the associated VPMS data. This is the solution that best meets the needs of prescribers and represents the long-term goal for VPMS integration. The challenges associated with this option include:

- Increased complexity with additional interfaces required to each EHR. Additionally, vendors have differing capabilities in interfacing with other systems
- Increased security and privacy risks
- Longer implementation timeline
- Increased dependency upon a third party system to maintain connectivity to avoid interruption in services
- VDH, VITL, and provider or provider organizations will incur costs to connect individual EHRs to VPMS.
- Recurring costs are typical as upgrades or enhancements to any system require that integrated system connectivity be updated or tested.
- Increased need for coordination with individual EHR vendors used by Vermont health practices. Each EHR vendor must implement changes to their product in order to integrate with VHIE. Resources needed include VITL staff time, vendor staff time, vendor fees, and VITL/Vendor/VDH time to coordinate testing resources.
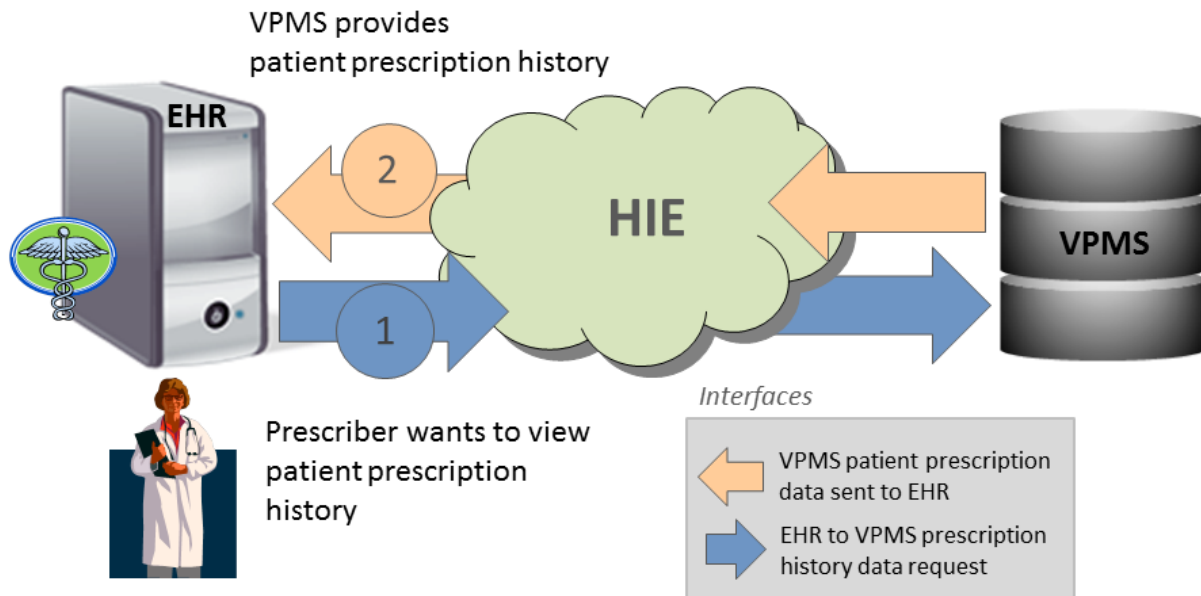

Figure 2: EHR to VPMS via HIE

Option 2 Challenges

- Implementation of EHRs to VPMS via VHIE will increase security risks, as private health information in the form of prescription data may be sent to the EHR. While the risk can be mitigated to a certain extent through the use of appropriate encryption technologies, this is an ongoing issue with complex data systems.
- Patient-matching to ensure that the records provided are those of the intended recipient, is critical to the success of this option. There must be a high level of confidence when matching patients within VPMS as well as between VHIE and VPMS and between VHIE and EHRs. The VPMS currently does not match near duplicate versions of a person with strong reliability so there have been instances where records should have been aggregated, but were not.
- This solution may require negotiating individual agreements with each EHR vendor.

Specific Technology Needed

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Identification of Potential Barriers to Integration

For both options, one of the biggest challenges is the synchronization of user profiles between multiple systems when changes occur, such as when a user forgets or purposely changes their password. A technical or manual solution will need to be in place to ensure that the two systems are synchronized to allow or deny access.

An Estimate of the Costs Associated with Integration

The total cost and resources needed to implement either integration option is unknown. In order to determine the costs and resources of Option 2, VITL would first need a comprehensive list of all EHR vendors represented by prescribers. Next, VITL would need to meet with each vendor, discuss technical specifications and resources needed to build the interfaces and build an estimate from that information. There are also costs associated with integrating VPMS and

VHIE. Once the VPMS vendor capabilities and VDH requirements have been outlined and provided to VITL, VITL may be able to provide an estimate of the cost.

VDH and VITL are currently integrating EHRs and the Immunization Registry.[2] This allows provider practices to send immunization information seamlessly to VDH. Four years after beginning the process, seven EHR vendors serving four hospitals and 34 practices are using this system. For context, as of June 2014 there were 501 interfaces connecting 16 hospitals and 158 other health care organizations to the VHIE. Immunization registry funding has been a combination of VDH incentive grants, Department of Vermont Health Access (DVHA) grants, as well as the overall state support provided to VITL to build the VHIE. Practices have incurred additional costs to pay their EHR vendors to modify EHRs. VDH anticipates integration with the VPMS would follow a similar pattern. The integration is complex, time-consuming and costly.

If integration is pursued, there may be opportunities to fund this project with grant monies from the Substance Abuse Mental Health Services Administration (SAMHSA). In previous years, SAMHSA has provided grant funding to assist states in integrating EHRs and PDMPs[3]. Additional funding provided by EHR incentive programs may also be sought.[4]

Conclusion and Recommendations

Option 1, the VPMS single sign-on option, is the recommended short-term solution to simplify prescriber access to the VPMS. The Department of Health should pursue the implementation of Option 1, and in future years, analyze the costs and benefits of implementing Option 2. The single sign-on solution allows registered VPMS providers to bypass the VPMS login process and launch directly and securely from the VITL HIE portal to the VPMS. This will give health care providers throughout Vermont easier access to comprehensive patient data and assist them in providing effective patient treatment.

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[2] http://healthvermont.gov/hc/IMR/overview.aspx
[3] http://www.samhsa.gov/grants/2013/ti-13-013.aspx
[4] http://www.healthit.gov/providers-professionals/ehr-incentive-programs