SUPPORTING PRESCRIPTION DRUG MONITORING PROGRAMS

December 1, 2012
Prepared for the Office of the National Coordinator for Health Information Technology by:

Genevieve Morris, Senior Associate
Scott Afzal, Principal
David Finney, Principal

Audacious Inquiry, LLC
5523 Research Park Drive, Suite 370
Baltimore, MD 21228
301-560-6999

Table of Contents

Tactical Issue Brief Series

The tactical issue brief series was created by Audacious Inquiry, LLC under a contract with the Office of the National Coordinator for Health Information Technology (ONC). Each brief will provide an overview of a value-add service health information organizations (HIOs) can provide to their stakeholders utilizing existing infrastructure, such as a master patient index or provider directory. Each brief profiles an HIO that has successfully implemented the service and provides practical real-world information to HIOs. The content, views, and opinions do not necessarily reflect those of the Department of Health and Human Services or ONC.

1. CRISP Profile

1.1 Use Case

A Prescription Drug Monitoring Program (PDMP) is a statewide database containing dispensing information of controlled dangerous substances (CDS). The goal of a PDMP is to reduce the abuse, diversion or other illegal use of prescription medications without unduly restricting access to such products for patients with legitimate medical uses. As of November 2012, forty-three states have operational PDMPs, while seven more states and U.S. territories have enacted legislation to establish a PDMP and are in the process of doing so.[1] Only one state, Missouri, has neither a PDMP nor pending legislation to establish one.

The state of Maryland passed legislation to create a PDMP in 2011. Maryland recognized a significant opportunity to coordinate its statewide health information exchange (HIE) implementation and PDMP efforts and thus increase the use and utility of both. The state's Department of Health & Mental Hygiene, the Governor's Office of Crime Control & Prevention, and the Alcohol & Drug Abuse Administration are working with the statewide health information exchange organization (HIO), the Chesapeake Regional Information System for Our Patients (CRISP), to leverage the existing HIE infrastructure to provide a single user experience and access point for both HIE and PDMP services. The PDMP will also rely on CRISP's statewide master patient index (MPI to uniquely identify patients and provide a single, comprehensive set of clinical information. Maryland's PDMP is expected to go live in late 2013.

From a technical perspective, the statewide MPI is a critical component of Maryland's PDMP approach. Maryland's MPI includes more than 4.25 million unique patient identities, and its sophisticated probabilistic matching algorithms give stakeholders a high degree of confidence in its ability to identify and link unique patients across various healthcare settings and data sets. In the absence of the ability to effectively link a patient's dispense records, a complete picture of prescription patterns, dispensing patterns, and abuse cannot be generated. By utilizing the CRISP MPI and assigning the same "enterprise" ID to dispense records as is used for clinical records in the HIO, the best patient matching tools can be applied to the task of linking patients across pharmacy data as well as to other clinical data, such as hospital discharge summaries and radiology reports.

Once dispense information is received by CRISP, matched with a patient identity, and stored in a central repository, it will be presented in a number of ways specifically tailored to the type of user:

- Providers will have the ability to log onto CRISP's secure web portal, query a patient, and view his or her clinical data alongside data available through the PDMP solution.[2] Beyond directly accessing the web portal, CRISP will enable single sign-on and patient context passing from

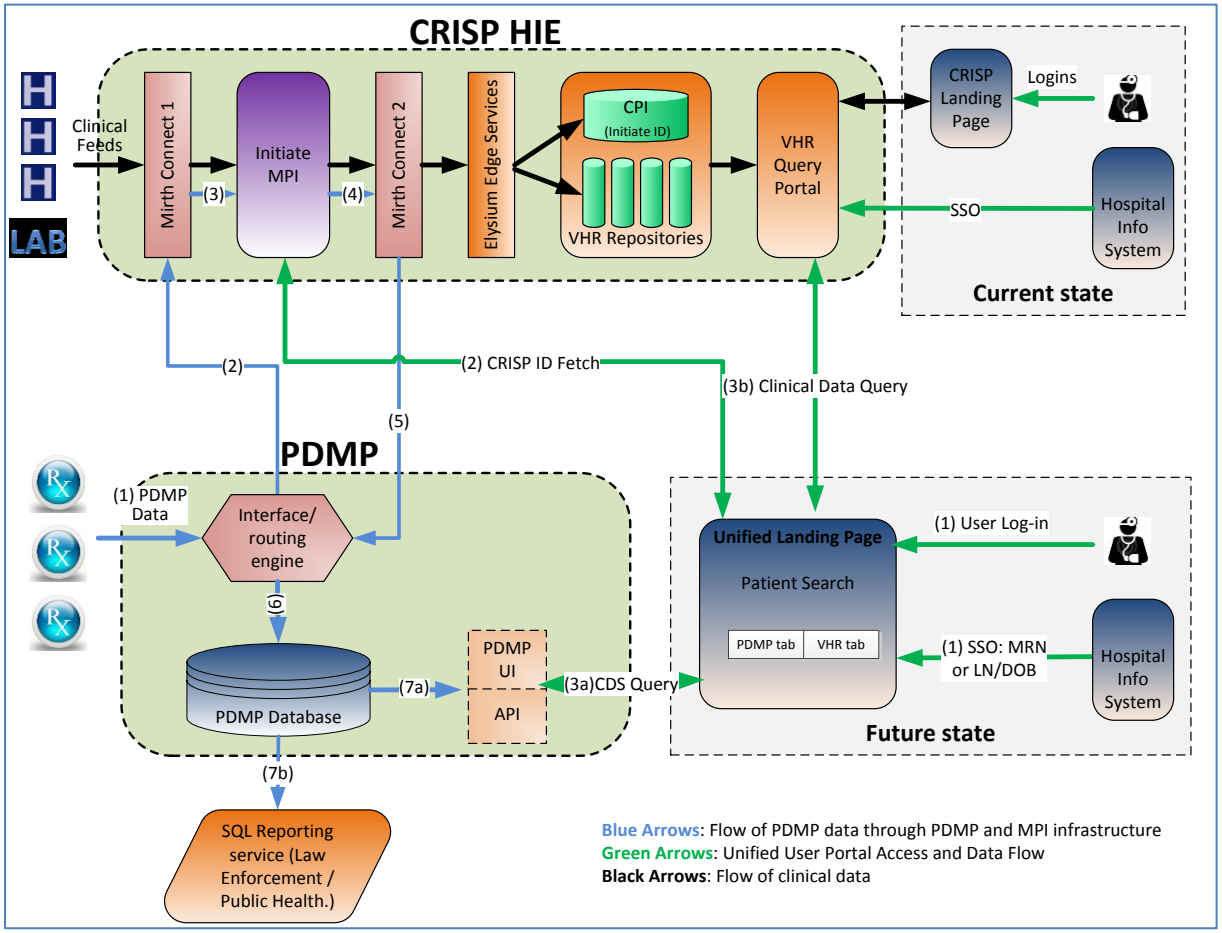
[1] States that have enacted legislation include: Arkansas, Georgia, Guam, Maryland, Nebraska, Vermont, and Wisconsin.

[2] If patients have opted out of CRISP, only PDMP data will be displayed as other clinical data will be suppressed.

hospital information systems, to reduce the workflow burden of accessing both HIE and PDMP data.

- The PDMP will also include a service offering to support the reporting needs of law enforcement and public health officials. This will be managed by the Department of Health and Mental Hygiene as any Federal, State, or Local Law Enforcement Agencies must submit a subpoena prior to the disclosure of PDMP data by the State and any public health requests must first be approved by the State.
- Third, CRISP will provide a separate web portal service for dispensers (pharmacies) where they will be able to flag potential drug seekers as well as see any alerts entered by others.

Looking forward, opportunities exist to enhance the solution by including integration with CRISP's encounter notification service to push PDMP data directly to an ER when a patient is registered, sending unsolicited reports to stakeholders, and integration with e-prescribing to notify providers of PDMP information from within ePrescribing workflows. Below is a diagram of CRISP's PDMP infrastructure.



1.2 CRISP Infrastructure Components

Component	CRISP Product
Query HIE Infrastructure	Optum
PDMP Solution	PDMP Vendor- TBD
Interface between PDMP and MPI	Mirth
Master Patient Index (MPI)	IBM/Initiate
API or Other Interface to the PDMP	PDMP Vendor
Unified Portal capable of outbound SSO SAML Assertions – HIE to PDMP	Optum
Record Locator Service (RLS)	Optum and PDMP Vendor

1.3 Cost

Deploying an off-the-shelf PDMP solution independent of any HIE integration can generally be accomplished for between $750,000 and $1 million. These costs focus on the hardware, software, customization of the software, and personnel time. The personnel time accounts for approximately half of the overall cost, including resources dedicated to the integration efforts. The remainder of the costs is dedicated to implementation of the PDMP software and any development related to customization. Depending on how the customization impacts the software licensing costs, it is estimated to range between $100,000 and $300,000 per year.

1.4 Return on Investment

PDMP efforts are largely initiated by states to address a substantial and growing public health endemic. As such, the financial ROI associated with such a program, and specifically a program implemented as outlined in this document, are further removed than with other technology investments. The non-financial ROI associated with a PDMP implementation similar to the one described in this document, is higher utilization rates of the service, resulting in a higher likelihood of intervention in CDS abuse and diversion (the selling of CDS).

1.5 Challenges

CRISP faces a number of challenges in supporting the state PDMP. CRISP has deep experience in evaluating and procuring health information technology; however, it anticipates that many vendors may be unable to currently support some of the unique functionality the state is seeking. For instance, the state's vision is for real-time availability of dispense data; however, while this is aspirational, it is unclear if the leading PDMP vendors and dispensers are able to transact in real-time.

Additionally, the ability to rely solely on a CRISP provided unique patient identity will require that PDMP vendors are able to modify their current patient linking techniques to account for and rely on the CRISP ID. Maryland's strategy presupposes that linking HIE services to PDMP will be mutually

beneficial, helping to drive use of both toolsets. However, instituting a workflow that is simple and functional for prescribers, dispensers, and law enforcement—while working within the HIO's current infrastructure—will likely prove a challenge. Nonetheless, it is vital to driving high adoption. One key, CRISP believes, is providing single sign-on and patient context passing capability between HIE and PDMP toolsets so that a unified set of data can be presented in a single user session, without the need to log into a separate application and launch multiple patient searches. CRISP expects the solution to this challenge to be technically complex.

2. PDMP Services

2.1 Importance & Business Case

Prescription drugs are the leading cause of accidental death in the U.S. Deaths related to prescription drug abuse outnumber those from heroin and cocaine combined. Easy access to and use of PDMP data is valuable for providers, hospitals, dispensers, payers, law enforcement, and substance abuse treatment programs to help slow and ultimately reverse this trend. Currently, state PDMPs have a range of funding sources that reflect these varied beneficiaries, including: federal and state grants, provider license fees tied to medical licensure, PDMP license fees, state general funds, licensing boards (particularly pharmacy), payer fees, pharmaceutical companies, and asset forfeiture funds from law enforcement agencies.

While many states are aggressively pursuing the implementation or promotion of PDMPs, those that are operational today are relatively underutilized, despite the potential to greatly impact health outcomes.[3] Some of the reasons for underutilization include variability in the data collection process, resultant data quality and reliability issues, a lack of useful or usable analytics and reporting, and other operational and policy challenges. A few states have placed requirements on prescribers to check the PDMP prior to prescribing a controlled substance, which may be a helpful advancement but raises questions of auditing and enforcement. An HIO is positioned to improve the utilization of a PDMP by serving as a "one stop shop" for the query clinical data. HIOs may also be able to encourage use through efficient workflows—by providing PDMP data directly into a provider's EHR system (using an API, SOAP, REST, or VPN connections), via a patient lookup web portal, or via a single sign-on launch from an EHR to a patient lookup web portal. There is also a potential to support dispensers and law enforcement agencies by providing solicited and unsolicited targeted reports.

2.2 Legal/Policy Considerations

PDMPs have been created through state legislation. Consequently, each state has its own set of rules for how PDMP data must be reported, who can access PDMP data, as well as how and when it may be used.

[3] Katz, N.,Panas, L., Kim, M.,Audet,A.D.,Bilansky, A.,Eadie,J.,Kreiner,P.,Paillard,F.C.,Thomas,C.,& Carrow, G. (2010). Usefulness of prescription monitoring programs for surveillance: analysis of Schedule II opioid prescription data in Massachusetts, 1996-2006. Pharmacoepidemiology and Drug Safety, 19(2), 115-23.

HIOs supporting the provision of PDMP data to providers must be aware of the applicable state laws and regulations and build their systems accordingly.

2.3 General Infrastructure Components

Component	Function
Master Patient Index (MPI)	Creates identity or matches to existing identity
Interface Engine between PDMP and MPI	Routes inbound data from the PDMP to next step (in this case MPI)
Data Feed – Patient Identifier from PDMP	A data feed from the PDMP to the HIO's interface engine that provides patient identifying information. Could be real-time or batch process.
API or Other User Interface to the PDMP	API or interface queries the PDMP for information when a provider looks-up a patient. Should include single sign-on and patient context passing.
Provider Directory	Maintains login credentials for the HIO's web portal, and the PDMP database.
PDMP Database	Provides dispensing information for controlled and dangerous substances.
Optional Components	
Record Locator Service (RLS)	Pull additional information on the patient, including lab results, medications, notes, encounters, and images
EHR Interface or API	Support EHR connection to PDMP database through an interface or API
SAML Assertions – EHR to HIO	Support single sign-on and patient context passing from EHR to the HIO to provide PDMP data within EHR system.

2.4 Potential Challenges

There are a number of challenges an HIO faces in supporting a PDMP service. First, the HIO must have a query infrastructure that is mature enough to justify integration with the PDMP program. Second, the majority of PDMP vendors do not receive real-time data from CDS dispensers, but rather receive batch files in varying intervals, ranging from monthly to daily. Therefore, the data provided to users of the PDMP are not always current. Third, the reliability of PDMP vendors in linking dispense records to individuals is unclear. Reliable identification is vital to proper data analytics, reporting, and clinical decision-making leading to dispensing and prescribing trends. A sophisticated matching algorithm is necessary to ensure accurate matching, given the characteristics of the population in the PDMP (who may be keen on providing multiple addresses and multiple names, especially those involved in "doctor shopping"). Next, managing various consent rules between programs can be difficult. Policy decisions may require an HIO to operate an "opt-out" consent model while PDMP legislation may prohibit opting out. Finally, the goal of creating a streamlined workflow that integrates PDMP data into prescribers and

dispensers daily routine such that there is less of a barrier to accessing patient prescription data can be challenging. This final challenge is rooted in the ability to integrate various data sets into a single view. That integration can occur at deeper levels whereby the various data sets are incorporated into one application, or by mimicking deeper integration by deploying capabilities such as single sign-on and patient identity context passing between applications.