



**TO:** Patty Salazar, Executive Director, Colorado Department of Regulatory Agencies  
Members of the Colorado General Assembly

**FROM:** Colorado Consortium for Prescription Drug Abuse Prevention

**DATE:** July 1, 2019

**RE:** 2019 Prescription Drug Monitoring Program Task Force Report

The Colorado Consortium for Prescription Drug Abuse Prevention (Consortium) submits the enclosed report on behalf of the Prescription Drug Monitoring Program Task Force pursuant to 12-42.5-408.5, C.R.S. This report details the Consortium's work on: a) metrics for measuring PDMP effectiveness; and b) the effectiveness of PDMP integration in Colorado.

Respectfully,

Colorado Consortium for Prescription Drug Abuse Prevention



**COLORADO ELECTRONIC  
PRESCRIPTION DRUG MONITORING PROGRAM**

**2018-2019 TASK FORCE REPORT**

**July 1, 2019**

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# COLORADO ELECTRONIC PRESCRIPTION DRUG MONITORING PROGRAM

## 2018-2019 TASK FORCE REPORT

### Introduction:

Current state law, Section 12-42.5-408.5, Colorado Revised Statutes (C.R.S.), requires the Executive Director of the Department of Regulatory Agencies (DORA) to create a Prescription Drug Monitoring Program (PDMP) Task Force or consult with and request assistance from the Colorado Consortium for Prescription Drug Abuse Prevention (Consortium) to:

- 1. Examine issues, opportunities, and weaknesses of the program, including how personal information is secured in the program and whether inclusion of personal identifying information in the program and access to that information is necessary;*
- 2. Recommend to the executive director ways to make the program a more effective tool for prescribers and pharmacists in order to reduce prescription drug abuse in Colorado.*

If the Executive Director convenes a Task Force, it shall submit an annual report to the Executive Director and the General Assembly detailing its findings and recommendations. 12-42.5-408.5(2) C.R.S.

This report highlights the recommendations of the Task Force to the Executive Director consistent with the directive to explore ways to make the program a more effective tool for prescribers and pharmacists in order to reduce prescription drug abuse in Colorado.

### History of Consortium and PDMP:

Established in 2013, the Consortium is a coordinated, statewide, inter-university/inter-agency network. It now supports ten different “Working Groups” with more than 600 participants, including professionals and other stakeholders. The Working Groups study, recommend, and implement ways to reduce prescription drug abuse in Colorado. The PDMP Work Group focuses on issues relating to the use and improvement of the state’s prescription drug monitoring program.

The Colorado PDMP has been enhanced over time, including the following milestones:

- In 2014, an administrative change increased controlled substance dispensing reporting from bi-weekly to daily, thereby providing up-to-date PDMP patient data for prescribers and pharmacists.
- In 2014, the Colorado Department of Public Health and Environment (CDPHE) gained authority to collect PDMP data for population-level analysis, expanding Colorado’s ability to study the effectiveness of the PDMP through statistical analysis.
- In 2014, prescribers and pharmacists started designating up to three delegates to access the PDMP on their behalf with proper authorization.

- In 2014, prescribers and pharmacies also started receiving unsolicited reports (Push Notices) that inform them on the number of their patients being prescribed controlled substances by multiple prescribers, at multiple pharmacies, over set periods of time. These Push Notices reduce potential patient misuse, abuse, and diversion of controlled substances, while increasing patient safety.
- In 2015, CDPHE received a grant from the Bureau of Justice Assistance to increase the use of the PDMP as a public health surveillance tool.
- In 2016, the PDMP created a five-minute online informational video to teach potential delegates and their corresponding overseeing prescriber or pharmacist how to set up a delegate account and begin accessing the PDMP on the prescriber or pharmacist's behalf.
- In 2017, SB 17-146 broadened access to the PDMP. Prescribers and pharmacists can now check the PDMP for reasons apart from controlled substance prescription considerations, including drug-drug interactions, dangerous side-effects and possible abuse or diversion issues. State law now allows:
  - (1) prescribers to query the PDMP to the extent the query relates to a current patient of the prescriber;
  - (2) pharmacists to query the PDMP when considering dispensing any prescription drug to a specific patient; and
  - (3) veterinarians to query the PDMP when they suspect a client (person responsible for the animal) is diverting the patient's (animal) controlled substance(s) or when they suspect a client is purposely abusing the animal to obtain a controlled substance.
- In 2018, the PDMP started sending individual PDMP scorecards to eligible prescribers. Information in the PDMP Scorecards includes key facts to help prescribers make more informed decisions, such as data on prescription volume and PDMP usage, MME (morphine milligram equivalent) dosing information, assessments that compare an individual's prescribing history to others within the same specialty, and more.
- In 2018, Governor John Hickenlooper signed Senate Bill 18-022. This new state law states that a prescriber shall not prescribe more than a seven-day supply of an opioid to a patient who has not had an opioid prescription in the last twelve months by that prescriber, with exceptions for chronic pain, cancer pain, post-surgical pain, or transfer of care from another prescriber who had prescribed an opioid to the patient. The law also restricts a second fill to a seven day limit with a requirement that prescribers query the PDMP prior to prescribing a second seven day fill.
- In 2019, Governor Jared Polis signed Senate Bill 19-228. This new state law expands PDMP access to Colorado medical examiners and elected coroners for patients whose death occurred under unusual, suspicious, or unnatural circumstances and are the subject of an autopsy.
- Senate Bill 19-228 also requires opioid prescribers to complete up to four credit hours of training per licensing cycle in order to demonstrate competency regarding: best

practices for opioid prescribing, recognition of substance use disorders, referral of patients with substance use disorders for treatment, and the use of the PDMP.

- In January 2019, DORA's Division of Professions and Occupations' (Division) Deputy Director of Programs became the liaison for external leadership and co-chair of the Consortium's PDMP Work Group. The Division's Pharmacy Program Director has taken a lead role for oversight of PDMP administration and the PDMP Administrator was transferred from the Division's Systems unit to the Pharmacy Program area. This administrative reorganization allows the Department to more directly connect PDMP administration with external strategic planning for statewide PDMP integration.
- In 2019, the Office of eHealth Innovation formed a new strategic policy subgroup that reports to the Colorado Consortium for Prescription Drug Abuse Prevention PDMP Task Force to advance statewide integration planning and implementation and to ensure alignment between various state agencies. This subgroup is currently focused on formulating recommendations involving funding, policy, governance, data sharing, research, and the future state of the PDMP technical architecture to advance PDMP integrations statewide. The subgroup includes key individuals from the Department of Health Care Policy and Financing (HCPF), CDPHE, Office of Information Technology (OIT), DORA and the Office of eHealth Innovation (OeHI). The sub-group will leverage the Colorado Consortium for Opioid Abuse Prevention PDMP Task Force for additional input and as a sounding board for strategy recommendations, scope of work, planning, and funding and leverage the eHealth Commission for higher-level strategic input.

## The PDMP and the Colorado Health IT Roadmap

Colorado's Health IT Roadmap<sup>1</sup> is the state's strategic plan for promoting and advancing the secure, efficient, and effective use of health information, and to inform, encourage, and influence future health IT initiatives. The PDMP is aligned in advancing the following Colorado Health IT Initiatives from the Colorado Health IT Roadmap:

- *Harmonize and Advance Data Sharing and Health Information Exchange Capabilities Across Colorado*
  - *Develop and implement approaches to harmonize data sharing capabilities, increase the rate of health information sharing, and advance health information exchange across Colorado.*
- *Statewide Health Information Governance*
  - *Put in place a governance structure to support statewide health information sharing and use. This governance structure would include statewide health data governance.*

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<sup>1</sup> Colorado's Health IT Roadmap (2017). Office of eHealth Innovation.  
<https://www.colorado.gov/pacific/sites/default/files/atoms/files/Colorado%20Health%20IT%20Roadmap%20FINAL%2011-15-2017.pdf>

As PDMP data is uniquely situated within the State Board of Pharmacy, the PDMP presents unique opportunities and challenges with respect to other health information. Significant federal funding opportunities from the Centers for Medicare and Medicaid Services (CMS), Bureau of Justice Assistance (BJA), and the Centers for Disease Control and Prevention (CDC) may be available to implement more widespread integration. The integration of PDMP data into electronic health records (EHRs) and health information exchanges (HIEs), and other PDMP integration initiatives should be consistent with the goals and strategies of other Colorado health information technology stakeholders.

## **Follow-Up to 2018 Task Force Report**

The DORA Executive Director made two requests for the PDMP Task Force following the issuance of the FY18-19 PDMP Task Force Annual Report:

- (1) The Task Force continue its work from 2017-2018 to develop recommendations concerning a specific metric (or metrics) for measuring Colorado's PDMP effectiveness
- (2) The Task Force study the effectiveness of PDMP integration as it relates to the utilization of the PDMP by prescribers and the reduction of opioid prescriptions.

See Attachment 2.

The 2018 PDMP Task Force was unable to come to a consensus on which metrics or measurements should be used to determine the success of Colorado's PDMP. In this report, the Task Force asserts that integrating the PDMP with health information technology represents the key to PDMP utilization and represents a meaningful alternative measure of PDMP effectiveness. This report describes potential refinements to current utilization methodology and new metrics that have been developed to track the progress of PDMP integration with EHRs and HIEs. It also discusses the numerous ways to integrate the PDMP with EHRs and HIEs, and argues that an understanding of PDMP technical architecture, data flow, and security in PDMP data sharing hubs and integrations, as well as workflows that generate automated and user-requested PDMP reports, is essential to ensuring that the PDMP's future state is aligned with the Health IT Roadmap.

## **Prescription Drug Monitoring Training and Technical Assistance Center, Prescription Behavior Surveillance System Measurements**

The 2017-2018 PDMP Task Force report detailed characteristics of all controlled substance and opioid prescriptions in Colorado as well as high risk prescribing practices and patient behaviors. This data is updated in this year's report in Tables 1-3 below. As PDMP integration increases, it will be important to continue to review these metrics to understand how integration is associated with reduced high risk prescribing and patient behaviors.

BJA’s PDMP Training and Technical Assistance Center’s Prescription Behavior Surveillance System (PBSS) uses several measurements and metrics to gauge the effectiveness of statewide PDMP systems. The definition of PBSS Measures<sup>2</sup> provides key metrics to monitoring and determining the success of PDMPs, which are developed in collaboration with the CDC to monitor trends in controlled substance prescribing and dispensing. The PBSS’ measurements include: overall usage within drug classes and for selected individual drugs; daily dosage; overlapping prescriptions within each drug class, across the opioid and benzodiazepine classes, and across dosage forms of opioid analgesics (i.e., immediate vs. extended release); questionable activity within a class or classes; inappropriate prescribing measures; and pharmacy-based measures of possible inappropriate dispensing.<sup>3</sup>

Overall controlled substance or opioid prescription volumes are difficult to attribute to PDMP utilization because many other factors are involved in the national trends surrounding opioid prescribing. However, comprehensive use mandates implemented during 2011-2015 were associated with a 6-9 percent reduction in opioid prescriptions with a high risk for misuse and overdose.<sup>4</sup> This indicates that high risk prescribing practices and patient behaviors noted in Table 3 can be more closely correlated with PDMP utilization, as the PDMP’s purpose is to inform prescribers and pharmacists of potentially dangerous drug doses, interactions, and to prevent drug overdoses due to prescribers and pharmacists having incomplete patient records.

**Table 1:** Characteristics of Controlled Substance Prescriptions Dispensed, Colorado, 2014-2018

Characteristics	2014	2015	2016	2017	2018
Number of Controlled Substance Prescriptions Dispensed	8,499,973	8,739,789	8,554,976	8,053,171	7,497,618
Number of Unique Patients	1,614,277	1,642,929	1,606,599	1,550,864	1,447,709
Number of Unique Prescribers	39,226	38,750	46,177	45,564	43,996
Number of Unique Pharmacies	1128	1028	1229	1298	1198

In 2014, NPI was used to identify unique prescribers and pharmacies as DEA numbers were not available until 2015  
 Data Source: Colorado Prescription Drug Monitoring Program, DORA; Data Analysis by: CDPHE, 2019

<sup>2</sup> PDMP Training and Technical Assistance Center Prescription Behavior Surveillance System, Definitions of PBSS Measures,  
[http://www.pdmpassist.org/pdf/COE\\_documents/Add\\_to\\_TTAC/Definitions%20of%20PBSS%20Measures.pdf](http://www.pdmpassist.org/pdf/COE_documents/Add_to_TTAC/Definitions%20of%20PBSS%20Measures.pdf)

<sup>3</sup> PDMP Training and Technical Assistance Center, PBSS website,  
<http://www.pdmpassist.org/content/prescription-behavior-surveillance-system>

<sup>4</sup> Bao, Y. et al. (2018). Assessing the Impact of State Policies for Prescription Drug Monitoring Programs on High-Risk Opioid Prescriptions. *Health Affairs*, 37(10), 1596-1604. Doi:10.1377/hlthaff.2018.0512



**Table 2: Characteristics of Opioid Prescriptions Dispensed, Colorado, 2014-2018**

Characteristics	2014	2015	2016	2017	2018
Number of Opioid Prescriptions Dispensed	4,039,048	4,310,254	4,159,575	3,765,259	3,317,520
Number of Unique Patients	1,085,551	1,131,781	1,102,297	1,027,685	931,427
Number of Unique Prescribers	25,011	24,784	28,063	27,676	26,718
Number of Unique Pharmacies	941	839	1,039	1,097	989

Data Source: Colorado Prescription Drug Monitoring Program, DORA; Data Analysis by: CDPHE, 2019

**Table 3: High Risk Prescribing Practices and Patient Behaviors, Colorado, 2014-2018**

Characteristics	2014	2015	2016	2017	2018
Percent of patients receiving more than 90 Morphine Milligram Equivalents (MME)	10.3%	8.9%	8.7%	8.2%	7.3%
*Rate of multiple provider episodes per 100,000 residents	170.1	124	93.6	68	40.3
Percent of patients prescribed long duration opioids who were opioid-naïve	18.2%	17.6%	15.8%	15.1%	12.1%
Percent of patient prescription days with overlapping opioid prescriptions	22.3%	21.5%	21.4%	20.5%	19.4%
Percent of patient prescription days with overlapping opioid and benzodiazepine prescriptions	12.1%	11.6%	11.2%	9.9%	8.9%

Schedule 2-4 Controlled Substances Excludes Buprenorphine drugs commonly used for treatment

\*2018 rates are calculated with 2017 population estimates as 2018 estimates are not yet available. Annual percentages are based on average of quarterly percentages

Data Source: Colorado Prescription Drug Monitoring Program, DORA; Data Analysis by: CDPHE, 2019

## Task Force Review and Responses to DORA Executive Director’s Request for Assistance:

The Task Force assigned the Executive Director’s request to its PDMP Work Group, which includes dozens of members with backgrounds related to medical practice, law, health information technology, interested patients and family members, members of the Colorado legislature, as well as representatives from various state and federal agencies. A full list of the PDMP Work Group members and their corresponding organizations can be found in Attachment B. The Task Force believes the following recommendations will help make the PDMP a more effective tool to reduce prescription drug abuse and misuse in Colorado.

### Task 1: Continue to Identify Metrics for PDMP Effectiveness

*The 2017-2018 PDMP Task Force Report provided a detailed survey of metrics used in other states, organizations, and partner agencies that could be used to measure the effectiveness of the PDMP in Colorado. Building upon this research, it is important to identify which metrics work best for Colorado, and how those metrics can be used to gauge the success of the state's PDMP. The Department requests that the Consortium*

*continue its work to develop recommendations concerning a specific metric (or metrics) for measuring Colorado's PDMP effectiveness in terms of opioid prescriber behavior (outside of just PDMP utilization). This research may include best practice research from other states, as well as current metrics used by other state agency partners.*

## **Response to Task 1**

This section discusses the progress of PDMP integration with EHRs, HIEs, pharmacy systems, and other health information platforms in the past year, potential improvements to our utilization calculations, and asserts that tracking the extent of integration represents a meaningful alternative measure of PDMP effectiveness. PDMP integration has increased significantly in the past twelve months, and these integrations have allowed the Division to closely examine PDMP activity.

A direct measure of utilization would mean assessing how frequently a prescriber or pharmacist queries the PDMP in advance of a controlled substance prescription or dispensation. Currently, the Division is unable to directly measure utilization on a statewide basis due to PDMP queries and dispensations being housed in separate data sets. Instead, the Division indirectly measures utilization by dividing total patient queries by total controlled substance prescriptions. However, the PDMP can be queried multiple times for the same patient or the query can be completed without the creation of a prescription. The multiple and various pathways for the initiation of a PDMP query make it difficult to construct a meaningful benchmark for success. The Task Force asserts that a change can be made to improve this indirect measure of utilization as described below.

The Division's analysis of PDMP activity in integrated systems demonstrates the significant impact of integration on pharmacist utilization while highlighting the fact that system configurations and organizational policies are also factors affecting PDMP utilization in an integrated system. Finally, as PDMP integration with health information technology is widely recognized as a prerequisite for widespread utilization, the Task Force recommends measuring the extent of statewide PDMP integration and more thoroughly understanding how these integrations are connected to provider workflows as an alternative measure for analyzing PDMP effectiveness.

### **PDMP Utilization Rate - Improved Methodology, Corrected Utilization Statistics, and CMS Mandate for Direct Measure of Utilization**

Previous Task Force reports have noted that Colorado's current PDMP utilization measure is problematic because of the indirect calculation methodology, but this year's report provides recommendations for improving the methodology for calculating utilization. Despite its limitations, Colorado can improve the accuracy of this indirect measure of utilization by discounting system-generated patient previews and only counting user-generated patient reports.

The Division analyzed PDMP query activity by prescribers and pharmacists using integrated PDMP connections and discovered that the current methodology for reporting utilization significantly over-counts utilization in integrated systems. Most integrated systems use a two-call approach to access PDMP data. This approach occurs when the providers' management system triggers a PDMP query to create a system-generated patient preview ("First Call"), followed by the request for a detailed patient report by the prescriber or pharmacist ("Second Call"). The Division's utilization methodology has not historically differentiated between these two query types. Utilization metrics currently count both system-generated PDMP First Call patient previews and detailed Second Call patient reports requested by the prescriber or pharmacist. The Division, in collaboration with the Task Force and CDPHE, recommend that only detailed patient reports requested by a prescriber or pharmacist be counted when measuring utilization for integrated users.

The issue of over-counting utilization has been most pronounced in pharmacist utilization rates. The pharmacy management systems generate a First Call to the PDMP whenever a pharmacist simply initiates a controlled substance dispensation workflow. System configurations also require the pharmacist to check the detailed patient report (Second Call) when a patient's PDMP report meets certain thresholds. However, the Division's field-based discussions with pharmacists working with integrated systems revealed company policies mandate review of detailed patient reports in most controlled substance dispensations.

A review of First Call and Second Call activity for these integrated pharmacy chains show that the First Call is generated more than once per controlled substance dispensation. This may be for a number of reasons including; a pharmacist may need to exit their workflow, or a second pharmacist may be entering the dispensation workflow. Both of these events are examples of when multiple First Call queries would be initiated. Analysis of Second Call PDMP query activity shows that detailed patient reports are reviewed by pharmacists in 90-100+% of controlled substance dispensations. Queries may exceed dispensations if pharmacists view a patient's report multiple times, or if multiple pharmacists review the same patient's information in a dispensation workflow. This causes utilization rates as currently calculated to exceed 100% at these integrated pharmacies.

Through the Division's review of query activity, consultation with the Task Force and CDPHE, and analysis of PDMP workflows at integrated pharmacies, the Task Force recommends that only the pharmacist-requested Second Call should be included when measuring utilization. Updating this methodology would result in a significant downward adjustment in pharmacist PDMP utilization, as detailed in Table 4. This change in methodology becomes more critical as other major pharmacy chains begin to integrate their pharmacy systems with the PDMP. If this methodology is not updated, pharmacist utilization rates as calculated would likely exceed 100% before the end of 2019, and recent EHR integrations would push prescriber utilization rates significantly higher. Furthermore, revising the calculation for utilization will allow Colorado to more accurately compare utilization activity in integrated and non-integrated pharmacies, better demonstrating the impact of integration for pharmacy utilization.

**Table 4: Original and Revised Utilization Rates**

	Original Prescriber Utilization Rate	Revised Prescriber Utilization Rate	Original Pharmacist Utilization Rate	Revised Pharmacist Utilization Rate	Integrated Pharmacist Utilization Rate (2 <sup>nd</sup> Call)	Non-Integrated Pharmacist Utilization Rate
Jan 2018	22%	16%	56%	27%	99%	11%
Feb 2018	29%	25%	63%	33%	99%	17%
Mar 2018	22%	18%	56%	29%	103%	13%
Apr 2018	23%	18%	60%	29%	102%	13%
May 2018	28%	20%	61%	31%	105%	15%
Jun 2018	31%	23%	62%	34%	86%	19%
July 2018	32%	23%	72%	38%	83%	22%
Aug 2018	35%	24%	86%	40%	93%	21%
Sep 2018	32%	23%	96%	39%	98%	20%
Oct 2018	34%	26%	81%	41%	99%	21%
Nov 2018	31%	25%	81%	42%	103%	21%
Dec 2018	34%	28%	81%	41%	101%	20%
Jan 2019	41%	34%	79%	34%	**47%	**30%
Feb 2019	34%	27%	80%	41%	95%	21%
Mar 2019	37%	27%	80%	42%	101%	19%

\*\*One pharmacy chain experienced integrated access issues during this month

Data Source and Analysis by Colorado Prescription Drug Monitoring Program DORA, 2019

Prescriber utilization rates are also affected by the two-call PDMP query activity within integrated EHR systems. With a revised methodology, utilization rate changes will not be as significant for prescribers because of the lower penetration of EHR integrations, the variation in what EHR workflows trigger a First Call PDMP query, and internal policies dictating when a prescriber must perform a Second Call query for a detailed report. However, with more healthcare organizations integrating their EHRs or HIEs with the PDMP, and with impending use mandates for Medicaid providers, it is critical to similarly adjust our methodology for calculating utilization for prescribers.

The Division also reviewed pharmacist utilization through integrated systems versus through PMP AWA<sup>TM</sup> as controlled substance dispensations are reported by pharmacy. By reviewing Second Call PDMP queries specifically at integrated pharmacies and dividing these Second Call queries by the integrated pharmacies' total controlled substance dispensations, the Division can report a utilization rate for Colorado's integrated pharmacies (two large pharmacy chains and three independent pharmacies). Additionally, the Division can report the non-integrated pharmacist utilization rate by dividing PMP AWA<sup>TM</sup> pharmacist queries by statewide dispensations at non-integrated pharmacies as seen in Table 4. This analysis shows a stark contrast in PDMP utilization between integrated pharmacies (approximately 100%) and non-integrated pharmacies (approximately 20%), and further supports the value of using integration as a measure of PDMP effectiveness.

Unlike the confines of a pharmacy setting where dispensations and queries are connected in a linear workflow, the dynamics of a prescriber's activity within an EHR make it difficult for the Division to estimate integrated versus non-integrated prescriber utilization rates, as the Division does not have sufficient information to understand whether a PDMP query in an EHR relates directly to a controlled substance prescription. Because PDMP query records are housed in a separate database from the controlled substance prescriptions, a cross-reference of a prescriber's PDMP query history against their controlled substance prescription history would be required, and this information would need to be aggregated across a healthcare organization. However, healthcare organizations are internally studying the impact of PDMP integrations as seen in the University of Colorado Health's multi-phase study of their integration.<sup>5</sup> Additionally, upcoming mandates from CMS will require most prescribers to query the PDMP in advance of a Schedule II, III, or IV controlled substance prescription and will therefore necessitate the development of direct measures of prescriber utilization by October 2023 as required in the 2018 SUPPORT for Patients and Communities Act<sup>6</sup>.

### **Integration as an Alternative Measure of PDMP Effectiveness**

The PDMP is ultimately a clinical information tool to provide prescribers and pharmacists with a patient's complete controlled substance prescription history. Measures of PDMP success should focus on making this information easily accessible with minimal disruption to workflow in a user-friendly format. Colorado's Health IT Roadmap calls for statewide integration of the PDMP. Integrating PDMP data into EHRs, HIEs, and pharmacy systems overcomes the greatest challenge to the utilization of the PDMP by incorporating the data into the user's workflow. The most widely cited reasons for low utilization through a web portal include:

- (1) the time-consuming nature of information retrieval, approximately 4-5 minutes per query;
- (2) the path to query initiation requiring at least 30 clicks and keystrokes per patient;
- (3) cumbersome password requirements; and
- (4) the lack of an intuitive format of data presentation.<sup>7</sup>

Public health outcomes have been shown to improve through easier access to the PDMP data,<sup>8</sup> thus PDMP goals should focus on PDMP usability and the user experience. PDMP integration has been identified as the most effective strategy for improving the use of PDMPs by the

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<sup>5</sup> Hoppe, Jason, MD. 2019. University of Colorado and Colorado Department of Regulatory Agencies. 2015-PM-BX-K003 Harold Rogers Grant, Preliminary Findings.

<sup>6</sup> H.R.6 - Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act or the SUPPORT For Patients and Communities Act of 2018. <https://www.congress.gov/115/bills/hr6/BILLS-115hr6enr.pdf>

<sup>7</sup> Rutkow, L. et al. (2015) Most Primary Care Physicians are Aware of Prescription Drug Monitoring Programs, but Many Find the Data Difficult to Access. *Health Affairs*, 34(3). 484-492. DOI: 10.1377/hlthaff.2014.1085

<sup>8</sup> Bao, Y et al. (2018). Assessing the Impact of State Policies for Prescription Drug Monitoring Programs on High-Risk Opioid Prescriptions. *Health Affairs*, 37(10), 1596-1604. Doi:10.1377/hlthaff.2018.0512

CDC,<sup>9</sup> CMS,<sup>10</sup> and CDPHE,<sup>11</sup> as it significantly reduces the time and effort required to query a patient’s record from 4-5 minutes in a standalone web portal, to as little as one to three clicks in an integrated system. Colorado’s current PDMP vendor, Appriss® Health (Appriss) offers the PMP Gateway™ (Gateway) as a translation service for integrated health system connections to the PDMP. Additionally, some integrations use supplemental data analytics software to provide data visualizations and risk metrics to allow for the prescriber or pharmacist to quickly analyze and interpret PDMP data.

While the current number of integrated facilities and integrated users represent a small fraction of prescribers, the number of integrations is quickly expanding. In early 2018, University of Colorado Health (30 facilities and 1,902 prescribers as reported in March 2019 PDMP reports) was the only major healthcare organization to integrate with the PDMP along with one major pharmacy chain. As of May 2019, 263 healthcare organizations have been approved by the Pharmacy Board to access the PDMP through the Gateway, though only 196 of these organizations searched the PDMP through the Gateway in May 2019. Close analysis of PDMP activity in these integrated organizations led to more detailed reporting of integrated activity, including monthly tracking of total facilities and users as seen in Table 5. Future reports could include further study of the physical locations of these integrated facilities and a statewide integration map.

With integration identified as the key to PDMP utilization, technological solutions to implement integration are rapidly advancing, and federal funding opportunities may provide additional resources to state PDMPs to expand integration. Solutions may include direct integrations within Pharmacy Systems and EHRs through the Gateway as well as integrations through HIEs which have varied levels of integration with other electronic health technology. Additionally, the RxCheck interstate data sharing hub (see discussion below) may provide new integration connection options for EHRs, HIEs, and pharmacy systems.

**Table 5:** Integrated Healthcare Organizations, Distinct Facilities, and Distinct Users from May 2019 Gateway Reports (Note: this only includes those who searched the PDMP through the Gateway in May 2019).

Integration Type	Integrated Organizations	Distinct Facilities - May 2019	Distinct Users - May 2019
EHR Integrations	182	434	4198
Health Information Exchanges*	2	9	67
<b>Total Integrated Facilities and Prescribers</b>	<b>184</b>	<b>443</b>	<b>4265</b>
Pharmacies	14	369	921

\*Colorado has two Health Information Exchanges - Colorado Regional Health Information Organization (CORHIO) and Quality Health Network (QHN).

<sup>9</sup> Division of Unintentional Injury Prevention; National Center for Injury Prevention and Control; Centers for Disease Control and Prevention. (2017). *Integrating & Expanding Prescription Drug Monitoring Program Data: Lessons from Nine States*. [https://www.cdc.gov/drugoverdose/pdf/pehriie\\_report-a.pdf](https://www.cdc.gov/drugoverdose/pdf/pehriie_report-a.pdf)

<sup>10</sup> Centers for Medicare and Medicaid Services. (2018) SMD# 18-006 Re: Leveraging Medicaid Technology to Address the Opioid Crisis. June 11, 2018. <https://www.medicare.gov/federal-policy-guidance/downloads/smd18006.pdf>

<sup>11</sup> CO Consortium for Prescription Drug Abuse Prevention PDMP Workgroup Meeting Minutes. 1/10/19. <http://www.corxconsortium.org/wp-content/uploads/1-10-19-PDMP-Work-Group-Meeting-Minutes.pdf>

Integrating the PDMP with health IT systems is a primary focus for state PDMPs. There are numerous viable integration strategies that may be supported with federal funding. A detailed understanding of existing and emerging technologies to optimize the effectiveness of the PDMP as a clinical decision-making tool is critical. This entails improving existing functionality by implementing additional tools in the PMP AWARe platform and validating integrated users against the PMP AWARe user database, analyzing opportunities for future enhancements, understanding the EHR and pharmacy system configurations that trigger PDMP queries, monitoring PDMP data transmissions from pharmacies to the database, understanding how queries and disclosures are transmitted from the database to the end user, and how data is shared across states. Improving the PDMP will also require collaboration with other state administrators to develop regional strategies to improve inter-state data sharing through integrated connections.

### Administrative Efforts to Improve Registration and Utilization

In 2014, legislation (HB14-1283) required in C.R.S. 12-42.5-403(1.5)(a) that all prescribers licensed in Colorado with a current DEA license and all pharmacists register and maintain a user account with the Colorado PDMP by January 1, 2015. The Division added language advising pharmacists that they are required to register and maintain an account with the PDMP in their 2017 license renewal. In late 2018, the Division added an attestation for pharmacists, physicians, dentists, and advance practice nurses with prescriptive authority, optometrists, podiatrists, and veterinarians. This has had some success in improving registration rates, but Colorado licensees have not universally registered with the program as required by statute. Table 6 lists the overall registration rate for each license type

**Table 6:** PDMP Registration Rates

License Type	Registration Rate
Pharmacist	85.2%
Physician	80.8%
Dentist	77.2%
Nurse Practitioner / Clinical Nurse Specialist	75.8%
Midwife with Prescriptive Authority	61.3%
Physician Assistant	80.6%
Veterinarian	72.9%
Optometrist	75.7%
Podiatrist	80.2%

Data Analysis by Colorado Prescription Drug Monitoring Program DORA, 2019

The Division sends communications to licensees through numerous channels, including email blasts, renewal attestations, and will soon be conducting Telephone Town Halls that allow

stakeholders to join virtual educational forums to further educate prescribers on their registration requirements and to encourage utilization.

Noted in last year’s report, a CDC grant awarded to CDPHE helped fund PDMP Scorecards. The Scorecards are sent quarterly to all prescribers who have prescribed an opioid in the previous six months, have a PMP AWARe account, and have listed a healthcare specialty in their PDMP profile. The scorecards compare a prescriber’s opioid prescribing activity with their peers having the same license type and same specialty. The scorecards include the number of patients to which they prescribe opioids and total number of opioid prescriptions, daily Morphine Milligram Equivalents (MME), opioid treatment duration, PDMP usage rates, patients exceeding the state’s multiple provider thresholds, and dangerous combinations as compared to their peers. The biggest challenges to the effectiveness of these scorecards lies in the high rate of prescribers who have not added a healthcare specialty, and the reliance upon prescribers to select a specialty that most closely reflects their medical practice.

The PMP AWARe portal requires all prescribers, with the exception of veterinarians, to add a healthcare specialty to their profile upon first logging in to the portal. The Division reviewed a summary of the number of prescribers who received a scorecard, those who did not write an opioid or other controlled substance, and those who did not receive a scorecard because no log-in to the PMP AWARe portal had occurred since the August 2017 launch of the new system and therefore had no healthcare specialty selected in their profile.

In an effort to improve engagement with the PDMP, the Division sent a mass email to the prescribers who did not receive the October 2018 Scorecard report due to their PDMP profile not having a specialty selected. This email blast included information about scorecards, and informed prescribers that they must log in to their PMP AWARe account to add a specialty in order to receive a scorecard. This e-Blast was sent to nearly 13,000 prescribers, with a 93% delivered rate and a 33% open rate. The summary below shows a modest increase of 833 prescribers receiving scorecards the following quarter. Therefore, of the 33% who opened the email, approximately a quarter of recipients added specialties to their PDMP accounts. Additionally, just because it was delivered does not mean the account was in use.

**Table 7: Prescriber Scorecard Details**

	Report Date					
Report Status	Jan 2018	Apr 2018	July 2018	Oct 2018	Jan 2019	Apr 2019
Report Generated	8906	10058	10922	11333	12199	15016
No Report - No Specialty	N/A	13651	13080	13088	12815	12261

Data Analysis by Colorado Prescription Drug Monitoring Program DORA, 2019



Recognizing that the e-Blast only led to modest success and acknowledging that challenges remain in prescriber engagement, the Division is working with CDPHE to use PDMP grant funds to perform three upcoming Telephone Town Halls as described above.

### **Recommendation: Task 1**

PDMP utilization may continue to represent a useful measure of PDMP effectiveness now that query activity within integrated systems is better understood. Updates to PDMP utilization calculation methodology will result in a significant downward adjustment of pharmacist utilization and more modest downward adjustments to prescriber utilization rates. Analysis of pharmacist utilization rates within integrated versus non-integrated pharmacies demonstrates a stark contrast between these environments and provides a strong case for pharmacy PDMP integration in terms of improved utilization. With PDMP integration identified as the key to enhancing utilization, new methods for analyzing integrated PDMP activity will allow the Task Force to quantify the extent of statewide integration. With more widespread integration, further research should focus on analyzing the effectiveness of various types of integrations and user interfaces in relation to controlled substance prescribing behavior. The Division should continue to perform stakeholder outreach, proactive communications and disciplinary efforts where necessary to pursue universal PDMP registration, increase utilization, and improve the effectiveness of prescriber scorecards.

### **Task 2: Effectiveness of PDMP Integration in Colorado**

*The Department requests the Consortium research the effectiveness of PDMP integration across Colorado as it relates to the opioid epidemic in Colorado. This may include measuring specific health outcomes of PDMP integration, as well as conducting cost/benefit analyses for statewide integration funding efforts. Keep in mind this may include research and best practices from other states with existing statewide PDMP integration.*

### **Response to Task 2**

Integrating the PDMP within health information systems is Colorado's goal, but there are many different levels and types of PDMP integrations that require consideration. Analysis of PDMP activity in an integrated health system and discussions with users reveals enormous variations among health information systems in how the systems present data and perform automated First Call queries. User interface design, internal policies, and system configurations that trigger or require a PDMP review may affect prescriber or pharmacist utilization. While PDMP integration does not guarantee universal utilization, it appears a prerequisite for broader use as it places PDMP information within a prescriber or pharmacist's workflow in a usable manner.

Public health research in Colorado is working to assess the effectiveness of various PDMP integration methods and determine best practices for the user interface components. These studies will inform how Colorado can pursue statewide integration in a format that effectively

and efficiently provides PDMP data to end users. Current and future analysis of PDMP integration should consider the evaluation of accessibility within a workflow and data presentation to accomplish an integration that is useful, easy to interpret, and that provides value in reducing harmful or high-risk controlled substance prescriptions.

The technical architecture map of the Colorado PDMP's current state outlines the domains and data transmission hubs involved in PDMP integration, and details the various integration options currently available (see Figure 2 below). Other states have taken various approaches to achieve statewide PDMP integration, including vendor-based strategies and state-based integrations with HIEs. Each strategy should be considered, and the integration strategy Colorado chooses must provide value to the end user while aligning with the state's broader health information technology goals and priorities.

### **Effectiveness of EHR and Pharmacy System Integrations for Utilization**

Close examination of PDMP query activity among integrated systems reveals variation in PDMP queries due to integration configurations, company policies, and whether the integration includes enhanced visualization and metrics. While PDMP integrations with EHRs, HIEs, and pharmacy systems improve PDMP accessibility by significantly reducing the time and effort required to query the PDMP, integration does not necessarily result in universal PDMP use.<sup>12</sup> For example, an emergency room may automatically perform a First Call query on all patients upon admission regardless of chief complaint resulting in a large number of queries, while a family medicine practice may only query the PDMP when pain is discussed during the visit, indicating PDMP queries within an integrated system may not relate directly to a controlled substance prescription.

Integrated PDMP connections can contain customized scenarios within a user's workflow that automatically query the PDMP in specific use cases. Most integrated systems use a two-call approach when querying the PDMP, discussed above. The ability to implement enhanced PDMP integrations can also provide additional data visualizations and analytics to help the user quickly interpret the patient's prescription history and make an informed clinical decision related to their treatment. It is important to note that the patient summary may provide enough information to make an informed decision and viewing the detailed patient report may not be necessary. The various use cases for PDMP summary information and PDMP detailed reports may partly explain the discrepancies between First Call and Second Call requests for an integrated healthcare entity.

The impact of system configuration and query requirements is highlighted in a recent study of prescriber PDMP Utilization in the University of Colorado's EHR integration.<sup>13</sup> The study measured PDMP query rates along several stages of integration:

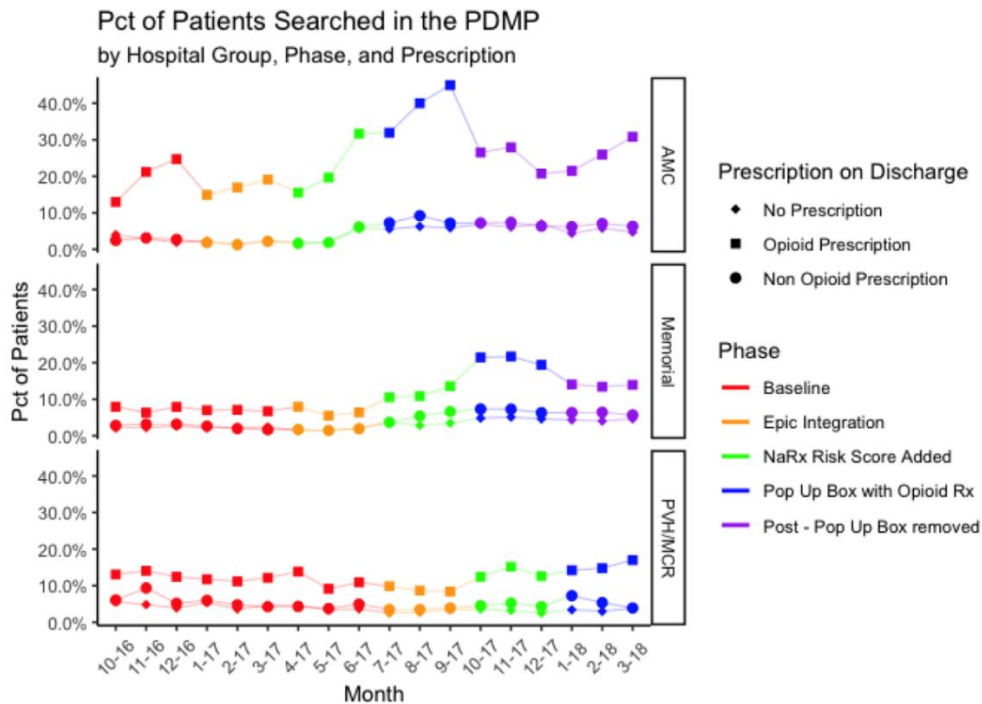
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<sup>12</sup> Hoppe, Jason, MD. 2019. University of Colorado and Colorado Department of Regulatory Agencies. 2015-PM-BX-K003 Harold Rogers Grant, Preliminary Findings.

<sup>13</sup> *ibid.*

- 1) integration with the University of Colorado's EHR (Epic) which allowed prescribers to query the PDMP in a single click;
- 2) addition of risk scores in the PDMP patient preview;
- 3) addition of a pop-up box when a prescriber entered an opioid prescription workflow (best practice alert); and
- 4) removal of the pop-up box in an opioid prescription workflow.

**Figure 1:** Hoppe, Jason, MD. 2019. University of Colorado and Colorado Department of Regulatory Agencies. 2015-PM-BX-K003 Harold Rogers Grant, Preliminary Findings. Used with permission - Dr. Jason Hoppe



This study found that PDMP integration within the EHR increases the frequency of PDMP queries above baseline measures. Additionally, integration with best practice alerts are the most effective means of increasing use, and removing the alert is associated with a decrease in searches.<sup>14</sup>

### Current State of the Colorado PDMP and Future Requirements

Figure 2 outlines the current state of the technical architecture for Colorado's PDMP. Colorado's current vendor, Appriss, operates PMP Clearinghouse, PMP AWARxE, and the Gateway. Pharmacies upload controlled substance prescription data daily to the Colorado PDMP through the PMP Clearinghouse. All data requests are routed through the PMP InterConnect® hub. PMP AWARxE users create profiles validated against the state licensing system, and users must log in to the web portal to perform a patient search. PMP AWARxE

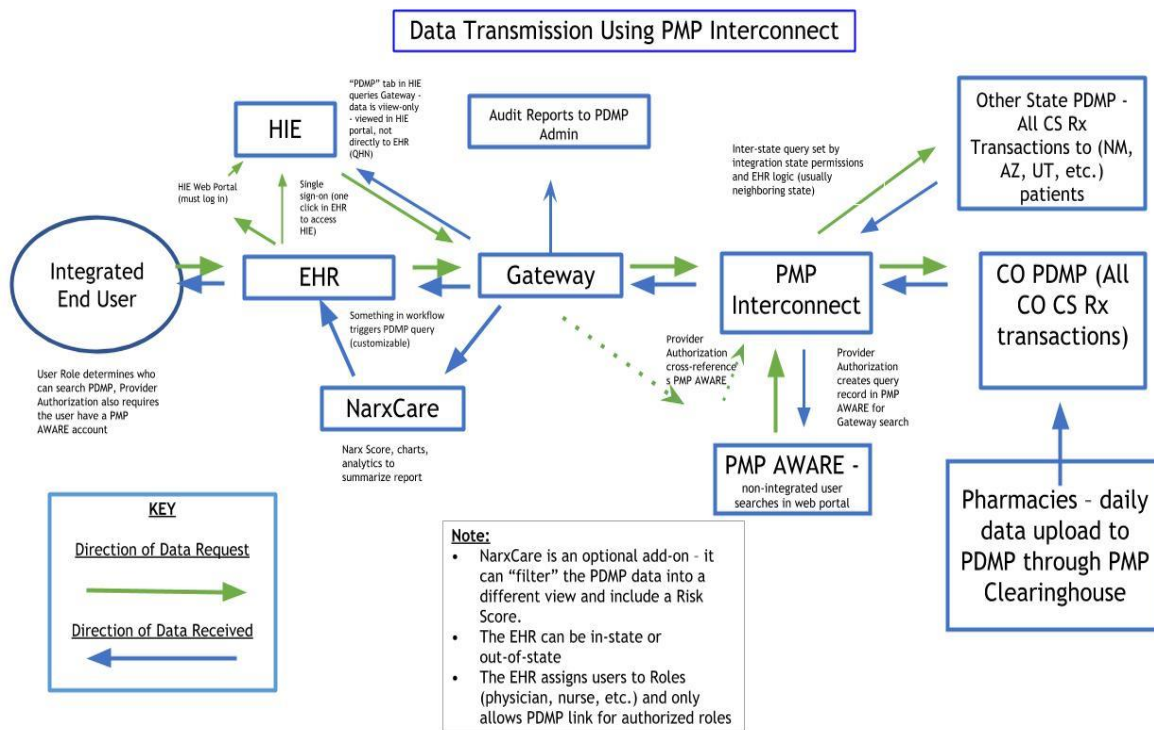
<sup>14</sup> ibid.

searches are routed through the PMP InterConnect hub, and a user can select any state PDMP with a data sharing agreement in place when performing a patient search.

Integrated health information systems use role-based permissions to allow authorized users (physicians, nurse practitioners, physician assistants, pharmacists, etc.) to query a patient’s PDMP data in a single click through a direct link in the interface when entering a workflow specified in the integration. If an integrated system also uses NarxCare™ PDMP reports are filtered through the NarxCare software to provide risk scores and additional data visualizations.

In situations where an EHR system is connected with a HIE that is integrated with the PDMP, the HIE portal contains a Gateway link to the PDMP. Some EHR systems have single sign-on access with the HIE and can access the HIE portal with a single click in the EHR, and then query the PDMP within one or two clicks in the HIE display. For HIE members without single sign-on functionality, users must leave their EHR and log into a web-based HIE portal to access additional patient information and the PDMP integration feature.

**Figure 2: Current State of PDMP Data Transmission**



### ***PMP InterConnect Data Sharing Hub and the Gateway***

The National Association of Boards of Pharmacy (NABP), in collaboration with Appriss, developed the NABP PMP InterConnect data sharing hub in 2011 to facilitate inter-state data sharing among PDMPs. Colorado entered into a Memorandum of Understanding with NABP in November 2012, allowing for inter-state data sharing with other state PDMPs through NABP’s

PMP InterConnect data sharing hub. As of June 15, 2019 Colorado shares data with 28 other PDMPs through PMP InterConnect (Alabama, Arizona, Arkansas, Connecticut, Delaware, Idaho, Illinois, Indiana, Iowa, Kansas, Maine, Massachusetts, Michigan, Military Health System, Minnesota, Montana, Nevada, New Mexico, North Dakota, Ohio, Oklahoma, Puerto Rico, South Carolina, South Dakota, Texas, Utah, Washington, and Wisconsin) with more anticipated in the future.

Neighboring states have the highest priority for interstate data sharing, as Colorado patients are more likely to have PDMP records there, and prescribers in these states are more likely to have patients with Colorado PDMP records. Also, CMS requires states to share PDMP data with all contiguous states to receive Federal Medicaid Assistance Percentage (FMAP) funding for integration expansion efforts. Colorado is not currently sharing data with Nebraska or Wyoming due to statutory limitations in those states which have prevented the sharing of PDMP data. Nebraska Legislative Bill 556, signed into law on May 1, 2019, will allow Nebraska to share PDMP data with Colorado beginning in late 2019.<sup>15</sup>

Each state has the authority to review requests for integrated access to neighboring state PDMPs, and there is significant variation among integration approval policies in Colorado's neighboring states. Colorado's two large integrated pharmacy chains employ a neighboring state's logic in their integration, which queries all neighboring states where a data sharing agreement is in place with every PDMP patient request. Analysis of PDMP audit reports reveals that Colorado patient records were disclosed in approximately 1% of neighboring state pharmacy queries. Integrated healthcare entities most frequently seek integrated approval for neighboring states, but implementation of neighboring state integrated approval is currently limited. Improving integrated neighboring state PDMP access in alignment with CMS' goals for integrated EHRs, HIEs, and pharmacy systems to query both home state and neighboring state PDMPs is important to improve the usability and performance of integrated PDMP connections.

The PMP Gateway is the translation service for integrated users accessing Colorado PDMP data. The Gateway is operated by Appriss and connects health information systems to state PDMPs through PMP InterConnect. Appriss has worked with most leading EHR vendors and pharmacy systems to develop integrated connections through the PMP Gateway.

### ***Health Information System Integrations***

Integrated EHRs and pharmacy systems primarily connect directly to PDMP data through the Gateway, and all data requests are routed through the PMP InterConnect hub. With the high volume of queries through these integrated connections, most EHRs and pharmacy systems are configured to query neighboring states but do not routinely query all states with data sharing agreements with the home state PDMP.

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<sup>15</sup> LB 556 "Change Provisions Related to Prescriptions for Controlled Substances and the Prescription Drug Monitoring Program", 2019 [https://nebraskalegislature.gov/bills/view\\_bill.php?DocumentID=37836](https://nebraskalegislature.gov/bills/view_bill.php?DocumentID=37836)

Appriss has worked with major EHR vendors to develop integrated connections to state PDMPs. Some of these integrations also use Appriss's NarxCare software, in which patient PDMP reports are filtered through the software to provide additional data analytics and visualizations, as discussed below.

Healthcare organizations and pharmacies must pay annual connection fees for each authorized Gateway user. Currently, 16 states have completed or are in the process of implementing statewide integration through the Gateway by paying the Gateway connection costs. In these statewide integrations, healthcare organizations work with Appriss to integrate their EHRs with the Gateway for direct PDMP access.

Other vendors, including OpiSafe™, discussed below, are developing alternative solutions to integrate PDMP data into health information systems through alternative connections and data sharing hubs. Increased competition and open application programming interfaces (APIs) for health information technology may drive innovation and reduce costs in the future, in line with Health and Human Services' proposed Rulemaking concerning Section 4003 of the 21<sup>st</sup> Century Cures Act to improve health IT interoperability.<sup>16</sup>

Federal funds are available through CMS FMAP funding and CDC to help cover the costs of statewide integration. However, it is important to note that FMAP funds would cover 100% of the costs for Medicaid providers for only the first two years, while funding maintenance costs indefinitely at 75%. Additionally, the CDC's Overdose Data to Action Grant will only cover three years of funding for non-Medicaid providers. Therefore, a long-term funding source would be necessary to cover the ongoing costs if Colorado adopts a statewide integration strategy.

### *HIE Integration*

Washington and Nebraska are leading the state-driven strategy of incorporating their PDMP within statewide HIEs. In this HIE-PDMP model, Nebraska collects both controlled and non-controlled substance prescriptions for a more comprehensive data structure that is incorporated into a broad statewide health information exchange. This model represents an option for statewide integration, but requires the HIE to develop integrated connections with EHRs statewide to allow PDMP checks to be incorporated in a prescriber or pharmacist's workflow.

Colorado currently has two HIEs which provide healthcare professionals with real-time, comprehensive clinical data about patients in a central repository. HIE members can access the HIE through a direct connection to their EHR or through a secure web portal. Additionally, HIEs can initiate customizable alerts or electronic reports pushed directly to their EHRs. The Colorado Regional Health Information Organization (CORHIO™) is a HIE based

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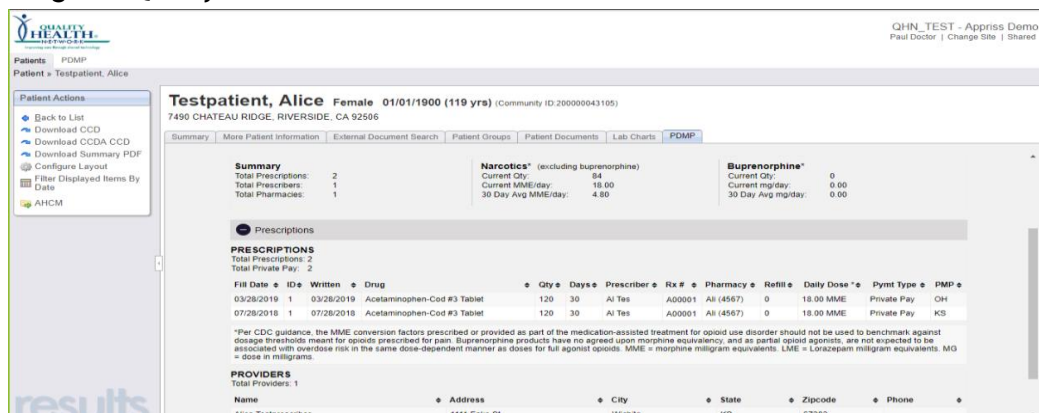
<sup>16</sup> Department of Health and Human Services. "Notice of Proposed Rulemaking to Improve the Interoperability of Health Information," 2019. <https://www.healthit.gov/topic/laws-regulation-and-policy/notice-proposed-rulemaking-improve-interoperability-health>.

in Denver with members across Colorado’s Front Range. Quality Health Network® (QHN) is an HIE based in Grand Junction, CO and serves providers along Colorado’s Western Slope.

Currently, some HIE members must log in through a web portal to access HIE data, which may include Emergency Room admission and discharge information, laboratory tests, immunization records, and other health information. For those who must sign in to the portal, the user must leave their EHR, visit the portal and log in to the HIE, enter patient information, and select the PDMP tab within the patient’s profile. While this approach requires a similar number of user clicks to obtain PDMP data as they would through the PMP AWARxE portal, the HIE serves as a single repository for patient information not housed within a user’s EHR.

For clients who have a single-sign on connection with their EHR, the user can click a link in their EHR to automatically sign them into the HIE portal and input patient information. As seen in Image 1, within the HIE portal, selecting the “PDMP” tab queries the PDMP and provides the user with a read-only view of the patient’s PDMP report. With a single sign-on connection through an EHR, PDMP data can be obtained in three clicks.

Image 1: Quality Health Network PDMP Link



Used with permission, Quality Health Network

Integrating the PDMP within Colorado’s HIEs could provide more direct access to PDMP data than a user of the standalone PMP AWARxE web portal, but does not offer the one-click access of a direct EHR integration. For healthcare organizations with a single sign-on connection to the HIE through their EHR, a PDMP query can be completed in three clicks, which is not as direct as an EHR with an integrated PDMP connection, but is significantly faster than needing to sign on to a web portal. However, as many organizations do not have single sign-on access to the HIE within their EHR, searching the PDMP through the HIE may not represent a significant difference in time or effort compared to logging in to the PMP AWARxE portal. For HIE integrations to represent a feasible statewide PDMP integration strategy, the HIEs would need to implement single sign-on access for the vast majority of providers’ EHRs, and obtain universal membership with authorized individuals.



## Software for Improving PDMP Usability and Facilitating Interpretation

Integrated connections to EHRs or HIEs place PDMP data within a prescriber's or pharmacist's workflow, but this direct access may not address the lack of an intuitive format for PDMP data, which is a barrier to utilization.<sup>17</sup> Several software programs interpret and visualize PDMP data through dashboards, charts, and scores. These programs are designed to help users quickly interpret the underlying PDMP data to facilitate clinical decision-making. Feedback from users and analysis of health outcomes in connection with software choices will be critical to better understand the value of these programs as the PDMP moves toward statewide integration.

**NarxCare** - Appriss offers an enhanced PDMP platform for authorized users. NarxCare provides data visualizations, calculates patient NarxScores™ which are provided in system-generated First Calls and include a link to the patient's PDMP report in the EHR or pharmacy system, and allows authorized users to add care notes to a patient's file or directly message others who are treating the patient. Providers currently must contact other prescribers or pharmacies listed on a patient's PDMP report when they have questions or concerns, but NarxCare notes and direct messaging between providers would give providers an efficient method of communicating with a patient's providers and pharmacies to relay questions or concerns regarding a patient.

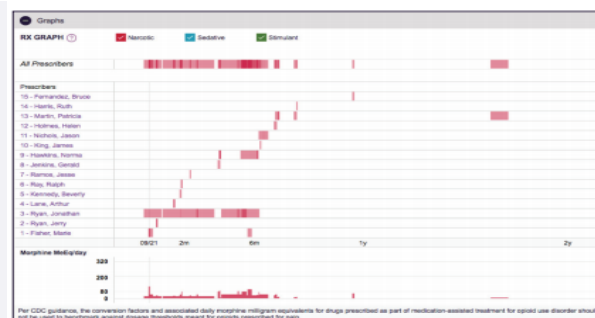
The representation of a complex data set through a relatable and identifiable number is a natural next step in the evolution of usability of the PDMP. Appriss' NarxScore is based on a proprietary algorithm, which calculates a score based on patient-specific controlled substance medications, Morphine Milligram Equivalent dosage, and the variety and frequency of different prescribers and pharmacies involved in the patient's care. The NarxScore does not directly elicit a prescriber or pharmacist to make any one specific clinical choice in a patient's care. Rather, the NarxScore provides a more focused lens to visualize and efficiently interpret a complex patient profile.

Image 2: NarxCare - NarxScores



Used with permission, Appriss

Image 3: NarxCare - Data Visualization

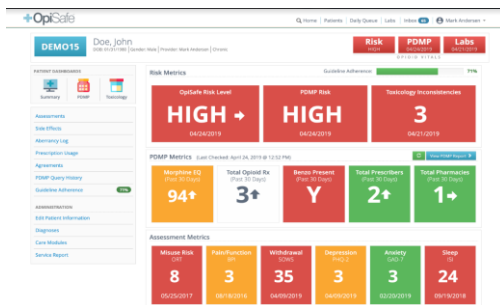


<sup>17</sup> Rutkow, L. et al. (2015) Most Primary Care Physicians are Aware of Prescription Drug Monitoring Programs, but Many Find the Data Difficult to Access. *Health Affairs*, 34(3). 484-492. DOI: 10.1377/hlthaff.2014.1085



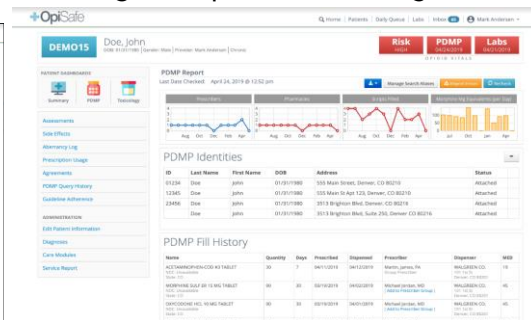
**OpiSafe** - OpiSafe is a smartphone compatible application that can be integrated into EHR systems, presenting an opportunity for isolated prescribers or large health systems to enhance the presentation and utilization of patient records. OpiSafe™ integration allows prescribers to comprehensively manage patient treatment plans by incorporating data from multiple external sources, including PDMP data, toxicology lab data, and patient reported outcomes. Prescribers can save their PMP AWARxE login credentials in the OpiSafe™ application, and can request OpiSafe™ to query the PDMP for a patient who has been entered into the OpiSafe™ application on an ad hoc basis or on a specific schedule. OpiSafe™ reduces the time and effort required to query the PDMP for prescribers who may not have access to traditional EHR integrations. OpiSafe™ does not generate any one specific “score”, but rather creates a dashboard utilizing segmented blocks of color coded compilations of data pulled from a variety of sources. This interface can be customized to align with healthcare organization policies. It also provides users a high-level picture view of patient data, and consequently, a user has the ability to further drill down into the details of a specific data set relative to a unique patient. Among various clinical data sources, and much like other integrations of the PDMP, OpiSafe™ also enhances usability of controlled substance data.

Image 4: OpiSafe™ Dashboard



Used with permission, OpiSafe™

Image 5: OpiSafe™ PDMP Page



### ***SUPPORT Act and PDMP Query Requirements for Medicaid Providers***

PDMP integration with health systems and inter-state PDMP data sharing have received significant focus in federal legislation with The 2018 Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act (SUPPORT Act)<sup>18</sup> and federal grant funding through The Centers for Disease Control and Prevention’s Overdose Data to Action Grant. Sections 5041 and 5042 of the SUPPORT Act will require Medicaid providers to check the PDMP before prescribing a Schedule II, III, and IV controlled substance to a covered individual by October 1, 2021, with several exceptions to this requirement.

<sup>18</sup> H.R.6 - Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act or the SUPPORT For Patients and Communities Act of 2018. <https://www.congress.gov/115/bills/hr6/BILLS-115hr6enr.pdf>

Requiring a Medicaid provider to check the PDMP before prescribing a Schedule II, III, and IV controlled substance represents an implicit mandate for PDMP integration for a majority of Colorado prescribers, as CMS recognizes that PDMP integration with EHRs or HIEs would be necessary to incorporate this requirement into a covered provider’s workflow. States can receive 100% FMAP funding for fiscal years 2019 and 2020 for PDMP implementation to facilitate the integration of PDMP information into the workflow of a covered provider if the state has data sharing agreements in place that allow a covered provider to search all contiguous state PDMPs.<sup>19</sup> States can use this funding to support a wide range of integration strategies as long as the end result is integration of PDMP data into a provider’s workflow.

The SUPPORT Act also requires states to begin reporting the percentage of Medicaid providers who checked the PDMP history of a Medicaid patient before prescribing a Schedule II, III, and IV controlled substance in the state’s Medicaid Drug Utilization Review annual report, beginning in October 2023. This will require states to develop metrics to directly measure utilization, which is currently unavailable. Direct utilization measurements would also allow Colorado to analyze prescriber compliance with the requirements outlined in SB 18-22.

### ***CDC Overdose Data to Action Grant and RxCheck Connection Requirements***

In 2019, the CDC released a new funding announcement called, *Overdose Data to Action*, which requires states to connect their PDMP to BJA’s designated data sharing hub, RxCheck, as a condition of grant funding. The CDC’s conditions require any state receiving funding through this grant to be capable of receiving and responding to a data request from a state via the RxCheck hub. This requirement does not force states to adopt the RxCheck hub as a replacement for PMP InterConnect. As a required condition for the CDC’s Overdose Data to Action grant opportunity, Colorado has requested connection of the PDMP with the RxCheck data sharing hub.

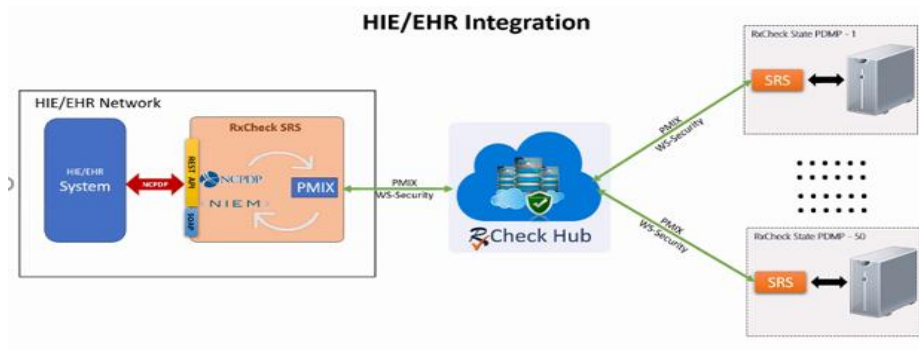
The RxCheck Governance Board is comprised of state PDMP Administrators. As a non-proprietary, state-governed solution, RxCheck reduces financial and technological barriers to sharing interstate PDMP data with electronic health record systems, pharmacy management systems, and health information exchanges.<sup>20</sup> Connection to RxCheck requires the installation of State Routing Services (SRS), which encrypt PDMP queries and reports and relays them through the RxCheck hub to an end user, which may be another state PDMP user, or an integrated connection. Integrated users could connect to RxCheck through connecting the RxCheck SRS to their EHR system, or to a HIE as seen in Figure 2.

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<sup>19</sup> Ibid.

<sup>20</sup> RxCheck Governance Board. 2018. RxCheck Informational Flyer for State PDMP Administrators.

**Figure 2: RxCheck Integration Data Flow Chart**  
**HIE/EHR Integration**



RxCheck offers an alternative integration of PDMP data into patients’ medical records. RxCheck also uses end-to-end encryption of a PDMP query and patient report between the requestor and the PDMP. This end-to-end encryption of PDMP requests ensures that the RxCheck hub cannot access the patient information enclosed in a PDMP report. Connecting to the RxCheck hub supports other state partners who choose to share data via RxCheck, while giving each state full control on how they choose to request interstate data sharing, who they share with, and how they integrate with electronic health record systems, pharmacy management systems, and health information exchanges.<sup>21</sup>

As of April 2019, seven states were connected to RxCheck, 19 states were in the process of connecting, and seven additional states have expressed interest in connecting. Additional states will certainly connect to RxCheck in 2019 in response to the CDC Overdose Data to Action Grant requirements. The RxCheck Governance Board and BJA are not attempting to replace the PMP InterConnect hub and are merely offering additional options and resources for data sharing. This second data sharing hub may represent an alternative to integration through the PMP Gateway.

### **Recommendation: Task 2**

Analysis of PDMP integration reveals that while integration provides access to PDMP data within a prescriber or pharmacist’s workflow, integration alone does not guarantee universal utilization. Additional factors must be considered when analyzing the effectiveness of PDMP integration. Usability, user interface design, and the user experience must also be considered when analyzing the effectiveness of integration.

Analysis of University of Colorado Health’s integration pilot project demonstrates how user interface warnings advising best practices concerning PDMP query improve utilization while also revealing that merely providing integrated PDMP access within a prescriber’s EHR does not guarantee utilization.<sup>22</sup> CDPHE’s analysis of integration pilot projects also provide insight in assessing the effectiveness of PDMP integrations. Further user experience comparative

<sup>21</sup> *ibid.*

<sup>22</sup> Hoppe, Jason, MD. 2019. University of Colorado and Colorado Department of Regulatory Agencies. 2015-PM-BX-K003 Harold Rogers Grant, Preliminary Findings.

analysis of EHR and HIE integrations would be helpful in determining which statewide integration strategies best meet the needs of Colorado's prescribers and pharmacists. With federal legislation identifying PDMP integration as the key prerequisite to implementing Medicaid provider use mandates, Colorado must develop a statewide integration plan that is consistent with the state's broader health information technology goals in the coming year.

### **PDMP Annual Report: Conclusion**

The PDMP is rapidly evolving as a clinical and public health surveillance tool. As thousands of deaths are attributed to drug overdoses each year, state PDMPs are increasingly recognized for their value in reducing dangerous prescriptions and drug diversion. In the few years immediately following the inception of the PDMP in 2007, technical restrictions prevented widespread utilization of the PDMP. Legislative changes in 2014 expanded access and mandated registration, but engagement with and utilization of the PDMP continue to lag, at least in part, due to the lack of statewide integration of the PDMP within prescribers' and pharmacists' workflows. Additionally, the requirements in SB 18-22 that a prescriber check the PDMP before prescribing a second fill for a seven-day supply of an opioid prescription for an opioid naive patient will be a challenge to promote and proactively assess without statewide integration and a direct measure of utilization. Similarly, Colorado must be prepared to meet CMS' upcoming PDMP query requirements for providers, which will mandate PDMP use for a majority of Colorado's providers.



**COLORADO**

Department of  
Regulatory Agencies

Executive Director's Office

August 27, 2018

Robert J. Valuck, PhD, RPh, FNAP | Professor  
University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences  
on behalf of the Colorado Consortium for Prescription Drug Abuse Prevention  
12850 E. Montview Blvd, Mail Stop C238  
Aurora, CO 80045

Dear Dr. Valuck:

On behalf of the Department of Regulatory Agencies (DORA or the Department), thank you and the Colorado Consortium for Prescription Drug Abuse Prevention (Consortium) for your continued support and advice concerning the Prescription Drug Monitoring Program (PDMP), including the Consortium's 2017-2018 Task Force Report. The Consortium's support and expertise this past year was invaluable.

Section 12-42.5-408.5, C.R.S. requires the Executive Director of the Department to consult with and request assistance from the Consortium as the PDMP Task Force. To that end, on behalf of the Executive Director, I am requesting assistance from the Consortium to examine issues and opportunities regarding the PDMP and to make recommendations on ways to make the PDMP a more effective tool to reduce prescription drug abuse in Colorado. In doing so, please prepare and submit an annual report to the Executive Director and the Colorado General Assembly detailing the Consortium's findings and recommendations by July 1, 2019.

#### Task #1: Continue to Identify Metrics for PDMP Effectiveness

The 2017-2018 PDMP Task Force Report provided a detailed survey of metrics used in other states, organizations, and partner agencies that could be used to measure the effectiveness of the PDMP in Colorado. Building upon this research, it is important to identify which metrics work the best for Colorado, and how those metrics can be used to gauge the success of the state's PDMP. The Department requests that the Consortium continue its work from 2017-2018 to develop recommendations concerning a specific metric (or metrics) for measuring Colorado's PDMP effectiveness in terms of opioid prescriber behavior (outside of just PDMP utilization). This research may include best practice research from other states, as well as current metrics used by other state agency partners.

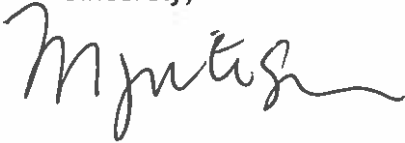
#### Task #2: Effectiveness of PDMP Integration in Colorado

With the recent adoption of *Senate Bill 18-022, Clinical Practice for Opioid Prescribing*, a prescriber in Colorado must limit the initial supply of opioids to one seven-day supply, while querying the PDMP before issuing a second seven-day supply, with certain exceptions. The bill's mandatory PDMP query requirement may have a significant impact on PDMP integration into statewide Electronic Health Records (EHRs) and Health Information Exchanges (HIEs)



across Colorado. As statewide PDMP integration begins to increase, it is important to measure the effectiveness of statewide integration efforts as it relates to both the utilization of the PDMP by prescribers and the overall reduction of opioid prescriptions. Building on recently adopted legislation, the Department requests the Consortium research the effectiveness of PDMP integration across Colorado as it relates to the opioid epidemic in Colorado. This may include measuring specific health outcomes of PDMP integration, as well as conducting cost/benefit analyses for statewide integration funding efforts. Keep in mind this may include research and best practices from other states with existing statewide PDMP integration.

Sincerely,



Marguerite Salazar  
Executive Director  
Colorado Department of Regulatory Agencies

cc: Dr. Larry Wolk, Executive Director and Chief Medical Officer, Colorado Department of Public Health and Environment  
Kyle M. Brown, Senior Health Policy Advisor, Office of the Governor



**PDMP Work Group Roster (current as of 5/21/19) Page 1 of 4**

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